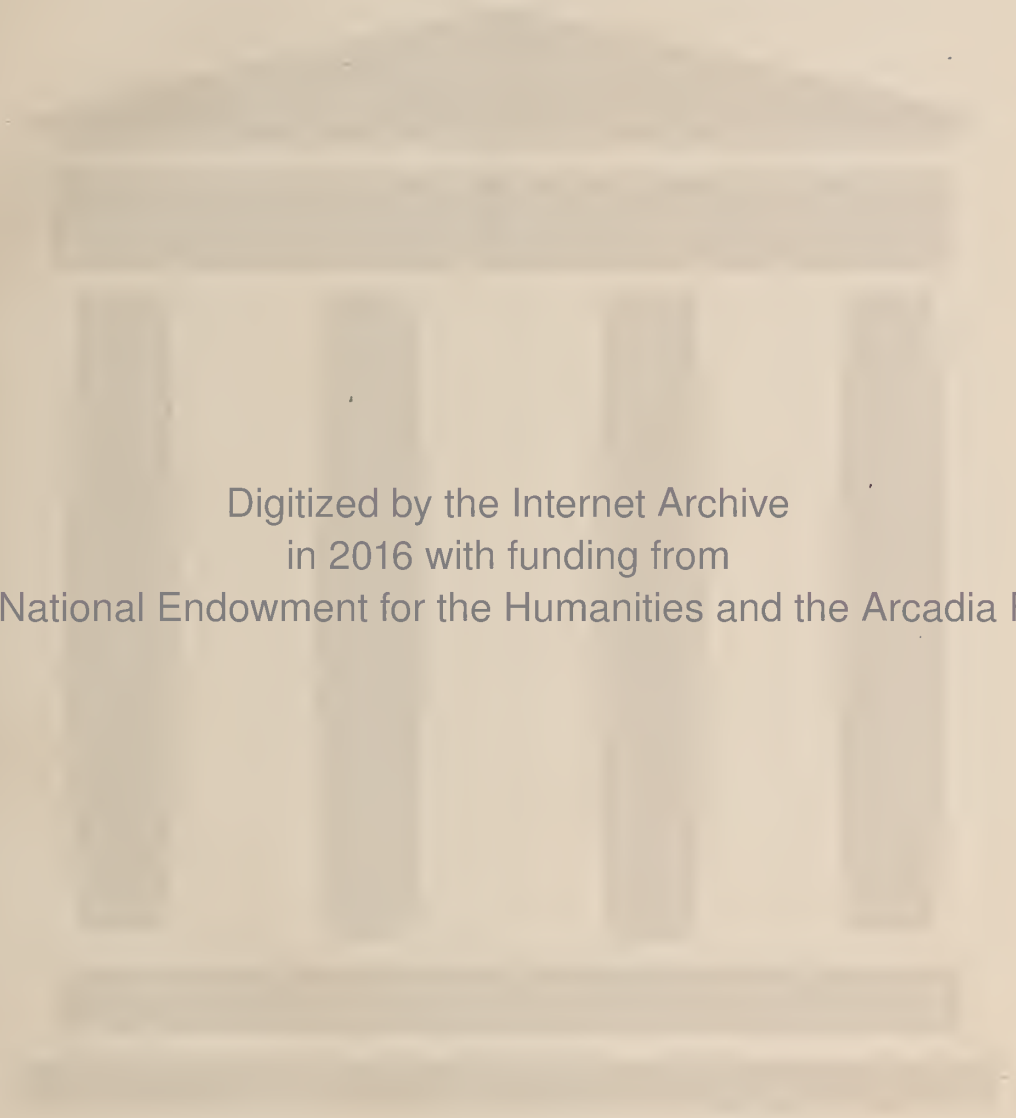
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ARTHUR T. McCORMACK, M. D.

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Next Meeting Lexington, 1920.

COUNTY SOCIETY REPORTS

Franklin—The Franklin County Medical Society met with Dr. J. P. Stewart at the Stewart Home, October 7th, at 4 p. m., having a full attendance of the physicians of the county and visiting Drs. Hill and Gardner of Louisville and Dr. Dodson, of Dotson, Ky.

A very sumptuous four course luncheon was served by Mrs. Stewart, for which a rising vote of the society was extended to her.

Subject of Round Table "Will Flu Return." The secretary traced the history of flu from the time and writings of Hypocrates, 412 B. C., to date and it was answered, yes, but in a modified form.

Franklin—The regular monthly meeting of the Franklin County Medical Society was held last night with Drs. U. V. Williams and Flora Mastin as hosts. As it was Dr. Williams' 86th birthday the meeting was held in the parlor of the Frankfort Hotel, and the following physicians were present: Dr. J. P. Stewart, President; Dr. U. V. Williams, Secretary; Dr. Flora Mastin, J. W. Wilson, L. T. Minish, O. B. Demaree, C. T. Coleman, John Patterson, R. M. Coblin, Warren Montfort and Joe Barr.

Dr. U. V. Williams entertained the gathering with reminiscences, and took occasion to pay a glowing tribute to the memory of his boyhood friend, Dr. William Bailey, who was raised at Bridgeport, this county, but for many years a prominent physician of Louisville. He said that when he removed to this city from Bridgeport, thirty-nine years ago, there were thirty-eight physicians in the county and he is the only one yet living. He stated that of the fifteen physicians who organized the Kentucky Midland Medical Association only two others besides himself were yet alive. He then gave quite an interesting account of his many experiences as a practitioner and Dr. Mastin read for him a list of the many important inventions which have been made in his recollection since 1841. He made the statement that the air brake, which has since made George Westinghouse a millionaire, was really invented by a millwright employed at Capt. John W. Russell's mill near Bridgeport.

An elegant lunch was served in the dining room of the hotel which was greatly enjoyed by all the physicians who were fortunate enough to attend the meeting, and all went away wishing that Dr. Williams may yet see his 100th birthday and his mind continue as bright and his memory as perfect as it is to-day.

U. V. WILLIAMS, Secretary.

KENTUCKY MEDICAL JOURNAL

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EDITORIAL

THE NEW HEALTH LAW, AND THINGS MADE POSSIBLE UNDER IT.

The last General Assembly, although considered by many people as unfriendly to the medical profession and the present State Board of Health, by transferring and consolidating all of the health activities of Kentucky into and under the direction of one central body, made it possible for the Board and the profession to do more for the protection of the health and lives of the people of Kentucky than was done by all other sessions in the history of the State. The annual appropriation of $75,000 seems small compared with the $3,644,000 made in Pennsylvania, and the large sums available in New York, Massachusetts, Ohio, Indiana and other states, but through the self-sacrificing labors of the members of this Board, the county and city boards and the medical profession, and the cordial cooperation of the press, we did as much in the past with an annual appropriation of $30,000 as many states did with five and ten times that amount. By properly utilizing what is now entrusted to us, as shown during the epidemic of Influenza, and with the advanced legislation secured, the possibilities for practical life-saving work in every county and community are only limited by the intelligence of the local fiscal authorities and people, and the extent of their cooperation. Much of this success in the past has been because the work except as to city health officers, has always been absolutely non-partisan and non-sectarian, making it possible to select the very best men and retain them in office indefinitely. In the same way merit and efficiency should, and will, be the only tests in establishing the new departments created by the recent enactments.

THE BUREAU OF VITAL STATISTICS

When the legal profession, city and county officials and people can be made to appreciate the importance to family and property interests of a systematic record of births, sickness and deaths, to say nothing of its value as the very foundation of all health work, we ought soon to know the location and cause of every case of sickness and death in every county and community, and be able to study the facts and give them such publicity by means of easily understood diagrams for schools and homes, through the public press and otherwise, until every section becomes educated as to its problems and dangers. After months of careful investigation of the records of the Bureau by representatives of the U. S. Census Department, sent to Bowling Green for that purpose, Kentucky was admitted into the registration area of the United States for births, being the seventh state so honored.

THE BUREAU OF BACTERIOLOGY AND EPIDEMIOLOGY

This bureau will be free to all physicians, and through them to every family in Kentucky, the purpose being, as in the past, to furnish daily aid and advice in the early recognition, and in preventing the development and spread of typhoid fever, tuberculosis, diphtheria and other communicable diseases. Qualified physicians will be only too glad to give their patrons the benefit of this assistance, indispensable to modern practice, and an effort will be made to so educate the people that physicians will be considered derelict who fail to do so.

THE BUREAU OF SANITATION

The language of the Statute is that there is hereby created "A bureau of sanitation, for the practical utilization of health knowledge in preventing and restricting the spread of the communicable diseases, and in abating

and minimizing the causes of sickness, including venereal diseases, and for the study and control of unsanitary housing, hotel and rooming conditions, and for the protection of the rivers, creeks, water sheds, springs, wells, and the regulation of sewers, household waste and other matters relating to the sources of purity of the water supplies in every section, and the board is empowered in its rules and regulations to provide for the protection and purification of the same." The phrasing of this subsection makes it so broad and comprehensive, and includes such an array of subjects, each of which is so important to the well being of a community, a state or a nation, that such a bureau might easily be made the foundation for an independent health department. For its proper operation, when fully organized, there should be within such a bureau:

1. A division of Sanitary Engineering, with its own chief and force of Inspectors.

2. A division of Industrial Hygiene and Housing.

3. A division for the Promotion of Child Welfare.

4. A division for the Conservation of Vision.

5. A division of County and Visiting Nurses.

THE BUREAU FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

If it is remembered that one out of every six deaths which occur in Kentucky every day in every year are caused by tuberculosis and that there are now thirty thousand persons within her borders afflicted by that disease, it will be easily understood why the creation of an organized force of experts within the State Board of Health which will, after a careful survey of methods and conditions, success and failures, in other states and countries, divide its entire time and energies to the systematic application of such methods as seem to promise most in cutting down our appalling sick and death rate from this disease. That the authority to conduct such a warfare against this chiefest enemy to human life is ample will be shown by the following quotation from the statute:

"The powers and duties of the State Board of Health in the study and prevention of Tuberculosis shall be coextensive with the State, and the objects of its Bureau of Tuberculosis shall be as follows:

"The study of this disease in all its forms and relations, and to secure and disseminate information with reference to tuberculosis, to promote and carry on a campaign of education with reference thereto and, in general, to pursue any other activities with reference to informing the public as to the nature of tuberculosis, its dangers, and the means whereby its spread may be prevented. Investigation of the prevalence of tuberculosis in Kentucky, and the collecting and publishing of tuberculosis. Securing of proper legislation for the relief and prevention of tuberculosis. Cooperation with the public authorities, state and local boards of health, the National Association for the Study and Prevention of Tuberculosis, medical Societies and other organizations in approved measures adopted for the prevention of the disease. To encourage the establishment throughout Kentucky of local associations for the purpose of undertaking in their particular localities the work proposed to be carried on by this Board. Encouragement of adequate provision of consumptives by the establishment of sanitoria, hospitals and dispensaries. And the Board and Bureau shall have full power and authority to carry out and execute all of the foregoing purposes." This is all well enough as an outline of the general work proposed, and in subsequent sections elaborate and detailed provisions are made for the creation and maintenance of county or district sanitoria by the Fiscal Courts or by vote of the people if such courts fail or refuse to act in the matter, when presented to them by the Bureau.

It is now known that the spread of tuberculosis is so intimately associated with the housing problem and especially with imperfect ventilation that it is expected that housing will be made a matter of special study and investigation by this Bureau as soon as it can be reached.

THE BUREAU OF PURE FOOD AND DRUGS

By provisions contained in the recent health legislation what was formerly "The State Pure Food and Drug Commission" was transferred to and, with greatly extended powers and duties, become the Bureau of Pure Food and Drugs within the State Board of Health, its analytical and other scientific work to be conducted under the auspices of a Director appointed by the Board in the commodious and splendidly equipped and manned Laboratories of the Experiment Station of the University of Kentucky, at Lexington This liberal and well-worked out arrangement provides that "The Director of such Laboratory or Laboratories, at the direction of the State Board of Health, shall keep and furnish such a supply of shipping and mailing containers and other laboratory equipments and supplies as may be necessary to execute the work of the Board;" for all of which the board pays a full round sum compensation

whether the medical profession and people have any analytical or other work done or not. This place within reach of every citizen and home in Kentucky, and of their health officers and physicians, scientific facilities equal to any in the world for the examination of specimens of public or private water and food supplies, habit forming drugs, nostrums and cure alls of every description and disease products of every kind which are suspected of producing sickness, not only free of cost, but with the urgent request that life saving use may be made of benefits for which large sums are being paid every month in the year until daily care as to the purity of the food they eat and the water they drink, as well as the air they breathe may become fixed habits of our people. This work appears to have been better done in North Dakota than any other state, and we are advised that the new Director will go first to that state and probably to others which are doing it well, for a few weeks study of their methods and results before assuming his duties.

A BUREAU FOR THE INSPECTION AND REGULATION OF HOTELS AND RESTAURANTS.

The State Board of Health under the new health law is required to establish and maintain a Bureau and to make rules and regulations for its guidance and for the information of the proprietors and managers of hotels and restaurants in this Commonwealth. Systematic inspections are required as to their sanitary condition, methods of preparing and serving food, the cleanliness and ventilation of rooms, drainage and all similar matters to be followed by such reports and actions as may be deemed necessary to protect the health and lives of the public. An annual license or certificate from the Board for each hotel and restaurant is required to be issued upon application, but if, upon inspection, it is found that the property and business are not equipped and conducted in such manner as meets the requirements of the law and the rules and regulations made under it, such certificate will be withheld until full compliance with the requirements have been secured. The law is a rigid one and it is expected that it will be so administered as to secure better conditions in the hotels and restaurants than now exist in many of the cities and towns in Kentucky.

BUREAU FOR THE PREVENTION OF VENEREAL DISEASES.

Under what is known as the Kahn-Chamberlain act the present Congress of the United States made an absolute appropriation of $1,000,000 to be apportioned to and used by the several states, under regulations to be adopted by their respective boards of health in efforts for the restriction of the three venereal diseases, syphilis, chancroid and gonorrhea; and appropriated other millions to be used for the same purposes, after the first named sum has been expended, conditional upon appropriations equal to their allotments before the Federal fund would become available. The State Board of Health promptly adopted the necessary regulations, the sum of $24,000 was placed in the State Treasury to its credit and, after the most mature consideration Dr. Leon L. Solomon was unanimously chosen Director of the Bureau, the Doctor generously insisting that he be permitted to serve without salary, so that the entire allotment could be devoted to the other purposes for which the appropriation was made. The plan was for Dr. Solomon to visit and speak to popular audiences in every county, under the auspices of the medical societies, Red Cross, Councils of Defense and other patriotic and public welfare organizations, going first to the college towns in or near which the Student Cadet Camps were located, using picture films and other methods of demonstration in such a campaign of education as would enlist the support of all classes in mitigating the appalling ravages of these diseases.

DIFFICULTIES TO BE ENCOUNTERED IN SUCH A WORK

With the experiences of other states and countries to guide us, to equip and select competent heads and assistants for these departments, and to so operate them as to get the best scientific results are largely matters of judgment and business administration. Our real difficulties will come in securing properly trained health officers for counties and cities who can give their time and energies to the practical application of this knowledge, and still more, to the creation of such a public sentiment as must be had to make effective health work possible.

SCHOOL FOR HEALTH OFFICERS

To enable us to meet the first of these difficulties provision was made in the law passed in 1910 providing for an Annual School for City and County Health Officers, with compulsory attendance, and actual expenses to be paid by the local fiscal authorities. Our own members and officials, who have excelled in certain lines of work will do much of the teaching, but expert scientists and demonstrators from other states, and the national departments, will also be secured. In order to make this work entirely practical, my idea is that we select some small city and types of country home near it, where we can get the cordial cooperation of the local authorities

ideal as to water supply, sewerage, garbage disposal, street and home cleaning, schoolhouse construction and maintenance, bakeries, dairies, abattoirs and markets; with the appointments of a new country home nearby complete as to ventilation, disposal of waste and all other matters relating to health, and use these as object lessons for the school.

WHAT THE HEALTH OFFICER MUST BE AND DO

Even with the most complete training and devotion to duty, there is little real future for this work in any city or county unless its health officer is so supported that he can give his entire time to his duties and until the office is taken out of politics and the tenure made to depend entirely upon a steady improvement in sanitary conditions, as shown by the gradual decrease in the sick and death rate. A real health officer of this kind who can secure and hold the cooperation of the people in the life saving work to which he has consecrated himself is a necessity of modern life in country and city alike. We pay thousands of dollars annually to maintain an elaborate system of courts and swarms of court officials without question or comment, partly because some of them are necessary and still more from custom. It is said that only one citizen out of a hundred ever has need for a courthouse, except as a place of record for deeds, mortgages and wills, but the reform for which we stand would put the benefactions of modern science, looking to the prevention of sickness, within the reach of every home which can be persuaded to accept it. Such a health officer should not practice medicine. It would be just as reasonable to ask the judges to support themselves and families by the practice of law while serving on the benches as to expect health officers to do their far more important and exacting work effectively and practice medicine. The vocation of health officers and medical practitioners are not only incompatible but there would be no time for practice if his official work were properly done, and in many counties there would be need for assistance to carry it on. In order to make it easier to bring this about, and in the interest of both efficiency and economy, it is suggested that except as to cities of the first class a systematic effort be made to combine the city and county office, or that both offices be held by the same person. Let us no longer deceive ourselves, or permit the people to be deceived. Unless we can have a trained health officer in each jurisdiction, assisted by one or more visiting nurses, so selected and supported that he can qualify himself for this specialty and make the practical prevention of sickness his life vocation, sustained health work in that jurisdiction is impossible, and if we do not have that in view and have reasonable hope of bringing it about, most of what this Board and the medical profession stands for in this regard is but an irridescent dream.

THE UNSELFISH WORK OF DOCTORS

Ours is the only vocation working systematically for its own effacement. In so far as the profession succeeds in preventing tuberculosis, typhoid fever and similar diseases it diminishes the income of its members. It often seems that this is one of the reasons why this reform is so misunderstood. It is because ours is essentially a humanitarian calling, in constant touch with sickness, suffering and death, and that it has found it far easier and safer to prevent than to try to cure this class of diseases. For the same reason, physicians do more charity than all other vocations combined and never take out a patent on a discovery or invention. These things also explain in part why the average annual income of the physicians of Kentucky is less than $800 and it is important that the official and people be informed of these facts that a misconception of the purposes of the profession may not obstruct this most unselfish work.

CAN IT BE DONE?

So far as this generation goes an appeal to the common sense of the business world gives the greatest promise of success. The facts and the losses from preventable sickness and deaths only need to be verified, and then iterated and reiterated, for their significance to be recognized. The employing classes want to live, and in a way want their employes to live. If shown that it would be cheaper to improve sanitary conditions and keep their employes well than to bring in immigrants to die of the same neglect, and that they and their families are likely to sicken and die prematurely from the same causes, it would impress them. Between the socialist, who believes the State should do everything, and the individualist, who believes it should do nothing, there is every shade of opinion. As usual the truth lies between. Under the complex conditions of both rural and urban life, when the individual has done all in his power for his own protection, there will remain a large domain where we must be protected by some general authority or perish. These things can be made plain and the public mind is now as never before in a receptive condition, especially to the spoken word and to ocular demonstrations. The times are propitious for the inauguration of the work. The press is with us to an extent not true in any other state, and will publish anything for which there is a popular demand. The women's clubs are already leading in it. The teachers' and people, making the sanitary conditions

and farmers' institutes and the labor organizations are asking for cooperation. As a means of meeting this popular demand it is suggested that the State be divided into sanitary districts with an active superintendent in each to cooperate with the health officer and profession of each county in systematic public meetings for the instruction of the people in all these matters. This is now being done in a few countries, but the movement needs to be systematized and made uniform if widespread results are to be expected. There are leading medical men in most sections so interested in this work already that it is believed that the plan could be followed out without great expense.

TEACHERS AND SCHOOLS THE HOPE OF THE FUTURE

The present generation has had little training as to the value of health in either the home or school, and it is so difficult to change the thought and habits of a lifetime that at best we can only hope to reach and influence the more intelligent classes and improve general conditions by the methods above outlined. With proper efforts the outlook is far different for the rising and future generations. We need to make a permanent alliance, offensive and defensive, with the teachers. Our report has been made a text book in one of the State Normal Schools, as we should try to have done in others and in the State University, and every teacher goes out indoctrinated as to modern methods for the prevention of disease. We should join in the efforts of the teachers' and women's clubs to have the future schoolhouse a model of architecture and in the best methods of ventilation, heating, lighting, water supply, and disposal of excreta, that it may be used by the teachers as an object lesson as to the importance of these matters in the home. Teachers realize as others do not that domestic science and manual training are but the first steps to a more practical and vocational system of education, and it ought not to be difficult for us to have the plain laws of healthy moral living given such a place in the curriculum as to make them a vital part of the warp and woof of the future men and women of Kentucky. Ours is a great opportunity. Let us not only pray that we may be equal to it but perform our duties in such a manner as to make it certain that our prayers will be answered.

THE LOGANBERRY AS IT GROWS.

The Loganberry grows in a cluster, like grapes, suspended below the leaves.

Readers who are familiar with the Loganberry must, of course, have noticed that the illustration of the Loganberry, in the Jiffy Jell page in our December issue, was inverted.

We are pleased to call attention to the error particularly as otherwise readers who may not have seen the Loganberry growing, might form the impression that this berry grows up right, instead of being suspended in a cluster.

SCIENTIFIC EDITORIALS

CIVILIANS AND THE ARMY ITCH.

In interesting manifestation of the spirit of unrest and recklessness, inevitably present in time of war, has been the production of baseless or exaggerated rumors. As of special interest we might mention the tetanus court plaster, ground glass in food, the Red Cross or hospital nurse who gives poison to wounded American soldiers, the German submarine which brought the influenza epidemic to this country;—these are a few of the sensational stories which have been received with credulity and spread without judgment and still recur from time to time in spite of the fact that they have been officially investigated, proven false and denied.

With somewhat more foundation than most of these is the story of the army itch. The draft has brought together in our cantonments men from mountain, plain and valley, from backwoods, town and city, which naturally make for epidemics. Though this has been well controlled by quarantine regulations it has been impossible to prevent the spread of certain infections. Among the other burdens of a soldier's life many of them have had to contend with infections by the acarus scabei.

Scabies has long been known by various pseudonyms; the terms army itch and camp itch shows its tendency to spread under such favorable conditions as occur in army and camp life. No doubt, infected soldiers have passed it on to civilians in some cases. However, the popular estimation of the number of cases of scabies among civilians is grossly exaggerated. Just as every cold or sore throat has been termed influenza among the laity so nearly every case of itching has been pronounced army itch. Let one worker in an office or factory be infected with pruritus from any cause and soon most of his co-workers who have heard exaggerated stories of the prevalence and high infectivity of the army itch begin to feel sure that they have

become infected with that disease. It does not matter that none of the characteristic lesions are present: it must be the army itch. We must also reckon with the fact that in any form of itching the scratches left by the finger nails often markedly simulate the dot like furrows of scabies.

There are several fairly common types of pruritus without primary skin lesions. Urticarias and the non-seasonal pruritus hiemalis are representative of this group. We have seen several such cases which have been diagnosed by the patient or their friends as army itch. Diabetes and nephritis are not infrequently the cause of generalized lesionless itching. Pityriasis rosea, tinea versicola and certain other dermatoses with slightly colored and non-elevated lesions may easily be masked by scratching and thus mistaken for scabies. Even the specialist is sometimes puzzled in endeavoring to detect or differentiate primary lesions from scratch marks, irritation and secondary pyogenic infection. Eczema dermatitis, even tinea circinata may be rendered diffienlt of recognition where the itching has been severe.

The differential diagnosis of scabies is easy where the skin has not been damaged by scratching. A valuable aid in diagnosis is the fact that the characteristic burrows will nearly always be found between the fingers in scabies while in other diseases scratching does not occur very often in those areas. Lesions of eczema, tinea and etc., must, of course, be sought for, though it must be recognized that other dermatoses and scabies may occur concomitantly. Constitutional causes of pruritus will be discovered in a careful examination, employing laboratory facilities. The presence of an urticaria may often be determined where scabies is suspected only by excluding this and other diseases.

It would be advisable for physicians to use their influence in combating the fear of the laity in regard to the army itch by informing them that the number of cases have been exaggerated and that it is not at all prevalent among civilians at present.

M. L. Ravitch and S. A. Steinberg.

Kuh (Arch. of Ped., April, 1915) reports two cases of early congenital bone lues in infants with X-ray plates and interpretative sketches. He emphasizes the practical importance of the Roentgen ray in the diagnosis and study of this condition, whose manifestations are so protean that it often is not recognized. In view of the great prevalence of lues, it seems certain that its congenital manifestations are more frequent than is ordinarily suspected.

ORIGINAL ARTICLES

RABIES.*

By Stuart Graves, Louisville.

Acting Assistant Surgeon, U. S. P. H. S.

The hospital chart of the case of rabies to be reported gives the following information in regard to it:

Male, white, 24 years old. Admitted Nov. 5th, 1917, at 9:30 P. M. Died Nov. 7th at 10:45 a. m. Admission diagnosis, rabies. Final diagnosis, rabies. Previous history unimportant. Present illness: Patient was bitten by a pet dog about 6 p. m. on July 3rd prior to onset of disease, making an incubation period of four months and two days. Dog's teeth passed through skin of little finger of right hand, making two small wounds. Finger was slightly sore for a few days, but patient did not regard bite as having any connection with his throat trouble. Dog was sick at time he bit patient and died four or five days later. No one thought of rabies and dog's head was not examined. Patient confused his rabic throat trouble with a cold he had had for three weeks. On morning of day he died patient was unable to talk distinctly. His teeth were partially set and at sight of water his throat muscles went into spasms and he moaned piteously, turning his head away and motioning with his hand to take away the glass of water. Temperature, pulse and respiration were respectively as follows: On admission, 100—94—24; at 9 a. m. of 6th, 102.2—104—24; at 2 p. m. of 6th, 103.4—124—28; at 9 a. m. of the 7th, 103.8—(axillary)—90—20. Treatment consisted of sodium bromide and chloral hydrate per rectum and morphine sulphate hypodermically. In spite of this, patient was restless, delirious occasionally, vomited greenish fluid several times and finally died in coma.

The autopsy was made six hours postmortem. Some hypostatic congestion of the lungs, congestion of the viscera and some congestion of the cerebral vessels constituted the gross microscopical findings. A culture of heart's blood on dextrose bouillon, taken under sterile precautions, proved negative. Microscopic examination of sections of heart, lungs and spleen, pancreas, liver, kidneys,

*From the pathological laboratory of the Medical Department of the University of Louisville and of the Louisville City Hospital.

Read before the Kentucky State Medical Association Louisville, September 4, 5, 6, 1918. Acknowledgement is gladly made of the authoritative article by Stimson, issued from the Hygienic Laboratory of the United States Public Health Service, from which much of the information in this paper is taken.

adrenal and aorta revealed nothing pathological except congestion. In a section of cerebellum, fixed in Zenker's fluid, cut in paraffin and stained with eosin and methylene blue according to Mallory's technic, typical Negri bodies were found both without and within ganglion (Purkinje) cells. These appeared as round or oval, distinctly outlined bodies of unequal size, staining deep pink with a slight purplish tinge ("magenta"). Sometimes two or three of these were found in one cell. A few seemed to contain tiny inclusion granules. The ganglion cells were in various stages of degeneration and disintegration. Some lymphocytes and plasma cells and endothelial leucocytes were found about some such cells and about some capillaries.

DISCUSSION OF THE DISEASE

Rabies or hydrophobia is an acute disease of warm blooded animals, dependent upon a virus which is communicable to man by inoculation with the saliva of rabid animals through the abraded skin of the man. The disease has been recognized for many centuries. The earliest reference to it is said to be that of Aristotle, in the 4th century B. C. Its continued existence, not to say increase, in animals and man is a reproach upon the efficiency of organized medical bodies for the suppression of infectious diseases. Once developed, rabies is almost uniformly fatal. Reliable statistics prove that less than 1 per cent., possibly not more than 0.5 per cent., die of rabies when properly treated with the Pasteur treatment. The average mortality without antirabic treatment is practically 100 per cent. These facts, which are well authenticated, are stated at the beginning in order to emphasize the need for the proper treatment of the disease and the efficacy of the treatment.

Rabies may be found in any part of the globe where man can live and is distributed almost everywhere. It was observed in America in the latter half of the eighteenth century and has been gradually increasing. On the other hand it has become practically extinct in England because of the stringent laws there providing for the muzzling of dogs.

According to Stimson[1] the most generally accepted view as to the manner of the pathogenesis of the microorganism causing rabies is that, upon its introduction beneath the epidermis or mucosa, it finds its most favorable, or perhaps its only favorable, medium for propagation in the nerve endings or torn fibres of the region. Along the course of these it develops, not disturbing their function, although rendering them ineffective, until the central nervous system is reached. Here the nerve cells are attacked, the first effect being a hyper-stimulation of their activity, the final result a destruction. These two effects upon the cells of the central nervous system explain the clinical symptoms. The onset of rabies is rapid and its course is rarely longer than one week. Osler[2] recognizes three stages of the disease.

(a) Premonitory stage, in which there may be irritation about the bite, pain or numbness. The patient is depressed and melancholy and complains of headache and loss of appetite. He is very irritable and sleepless and has a constant sense of impending danger. There is often greatly increased sensibility. A bright light or a loud voice is distressing. The larynx may be injected and the first symptoms of difficulty in swallowing are experienced. The voice also becomes husky. There is a slight rise in the temperature and the pulse.

(b) Stage of excitement. This is characterized by great excitability and restlessness and an extreme degree of hyperesthesia. "Any afferent stimulant—i.e., a sound or a draught of air, or the mere association of a verbal suggestion—will cause a violent reflex spasm. In man this symptom constitutes the most distressing feature of the malady. The spasms, which affect particularly the muscles of the larynx and mouth, are exceedingly painful and are accompanied by an intense sense of dyspnoea, even when the glottis is widely opened or tracheotomy has been performed" (Horsely). Any attempt to take water is followed by an intensely painful spasm of the muscles of the larynx and of the elevators of the hyoid bone. It is this which makes the patient dread the very sight of water and gives the name hydrophobia to the disease. These spasmodic attacks may be associated with maniacal symptoms. In the intervals the patient is quiet and the mind unclouded. The temperature in this stage is usually elevated and may reach from 100 degrees to 103 degrees. In some instances the disease is afebrile. The patient rarely attempts to injure his attendants and in the intense spasms may be particularly anxious to avoid hurting any one. There are, however, occasional fits of furious mania and the patient may, in the contractions of the muscles of the larynx and pharynx, give utterance to odd sounds. This stage lasts from a day and a half to three days and gradually passes into the

(c) Paralytic Stage—In rodents the preliminary and furious stages are absent, as a rule, and the paralytic stage may be marked from the outset—the so-called dumb rabies. This stage rarely lasts longer than from six to eighteen hours. The patient then becomes quiet; the spasms no longer occur; unconsciousness gradually supervenes; the heart's action becomes more and more enfeebled, and death occurs by syncope.

ETIOLOGY, INCUBATION, PATHOLOGY.

Exactly what the causative organism of rabies is has not been determined. In 1903 Negri[3] described the peculiar structures now know as Negri bodies, which are most regularly present and most numerous in the larger cells and in the ganglion cells of the cerebellum, although they have been reported as found in the salivary and sub-maxillary glands. Whatever may be the final conclusions as to the pathogenic organisms of rabies, it has been found by many careful observers in thousands of cases that the so-called Negri bodies are almost constantly associated with the disease. Control examinations of a large number of brains from animals or human beings dying from other causes have not shown the presence of these peculiar bodies. The concensus of opinion to-day seems to be that the Negri bodies, or their inclusions, are the causative agent and are probably parasites. The infectious organism passes through a Berkfeld filter.

"Street virus" (virus des rues, Strassenvirus) is the virulent nervous tissue as met with in the natural disease. Pasteur found that he could increase the virulency of this virus by passing the "street virus" through a series of rabbits by subdural inoculations until he reduced the period of inoculation to 6 to 8 days. This produced a fixed, maximum virulence and such virus he designated "virus fixe". In a series of painstaking experiments he then ascertained that such "fixed virus" could be gradually attenuated by drying over caustic potash at a temperature of 25 degrees C., the degree of attenuation varying directly with the time of drying, until finally virus dried for eight days was no longer regularly infectious and that dated for 12 to 14 days had completely lost its virulence. The idea of using attenuated virus as a protective vaccine soon followed and Pasteur demonstrated that, by treating a dog with much attenuated, then with less attenuated, then with moderately strong virus, the animal developed an immunity which enabled it to resist infection with an amount of virulent material that would certainly kill an unprotected dog. On this experimental basis Pasteur developed his treatment for humans and practically the same treatment is still considered the safest and most reliable. In 1910 four hundred and ten patients were treated at the Pasteur Institute in Paris without a death.

Five years ago Noguchi[4] announced that he had been able to cultivate the virus by employing a technic similar to his methods of cultivating treponema pallida and poliomyelitis virus. Into high tubes filled with ascitic fluid a bit of fresh sterile rabbit kidney and a small piece of rabic virus were placed. The ascitic fluid was covered with sterile oil and the tubes incubated at 37.5 degrees C. After five days' incubation cloudiness appeared and, with it, minute globoid bodies not unlike those seen in poliomyelitis. After several generations large, highly refractile bodies with dark central spots appeared in the cultures and these Noguchi regards as possibly the parasites and similar to Negri bodies. While opinions are still divided as to the significance of Noguchi's results, there is no argument over the fact that "he has accomplished the feat of preserving the virulence of the virus through twenty-one generations on artificial media, a fact which alone would seem to prove that he had successfully cultivated it, even though his 'nucleated bodies' do not eventually turn out to be anything more than cell degeneration. The possibility that he may have carried original virus through twenty-one generations and that it has remained virulent for about 100 days at 37.5 degrees, cannot be excluded as yet, but seems very remote"[5].

The incubation period varies greatly. It is seldom less than ten days, but may be more than a year. The majority of cases develop clinical signs before the end of the third month. Extremely long periods as reported always lead to the suspicion of a mistake or the occurrence of an unobserved or forgotten intermediate exposure. Incubation is shorter in children than in adults. In 510 cases Bauer[6] found that the average period of incubation in males was sixty days, in females sixty-five days. Incubation is shorter and the disease more severe as a rule, following wounds in the lower portion of the body. The etiological agent has greater distances to travel along nerve trunks in wounds of the latter. Severity also varies according to the animal which brings the infection, in order of decreasing severity the animals being as follows: Wolf, cat, dog, other animals.

There are no characteristic gross pathological signs of rabies. The vessels of the meninges may be found congested and there may be congestion of the viscera. Microscopically the Negri bodies have been found so constantly associated that they are considered now as pathognomonic of the disease. The diagnosis is considered positive for all practical purposes if the Negri bodies are found within the ganglion cells. They are usually most numerous and most regularly present in these cells of the hippocampus major or cerebellum, but may be found in the ganglion cells of the cerebral cortex and medulla or even in the cord. There is generally more or less infiltration of leucocytes, especially lymphoid cells and endothelial leucocytes, around the blood vessels and the ganglion cells. The latter are likely to show various signs of retrograde change.

DIAGNOSIS AND TREATMENT.

The questions which invariably come to the patient and physician when the patient has been bitten by a dog are:: "Should the patient take the Pasteur treatment?" and, "What should be done to establish a positive diagnosis?" The first question can be answered by the statistics. About 16 per cent. of people bitten by rabid dogs develop rabies themselves. The instances of recovery of man from developed rabies are so rare and so poorly authenticated that it is questionable if any real case of developed rabies in man ever recovered. To be on the safe side any person bitten by a dog should take the Pasteur treatment. There are no specific contraindications for it. It may be, however, that such a person prefers to wait until a positive diagnosis of the condition of the dog can be made.

The first thing is to be absolutely certain that the dog which bit the patient is captured. If it presents signs of rabies in itself, it should be killed at once and its head delivered immediately to a laboratory prepared for the examination of the head with a view of making a diagnosis of rabies. This is usually the City, County or State Health Laboratory. If the dog does not show any signs of rabies it should be kept under observation for a period of ten to fourteen days, which is usually the maximum period of incubation of the disease in dogs. It must be borne in mind, however, that the saliva of dogs has been proved to contain the virus of rabies four days before the disease developed in the animal. The period of incubation in the wounded human patient may be very little longer than this period of waiting. It is in such human cases of short incubation, in which the disease is proportionately virulent, that occur the very few instances of inefficient treatment with attenuated virus begun before the onset of symptoms. The time for developing active immunity is too short.

If the dog's head cannot be delivered immediately in a fresh condition, it should be packed in ice and delivered as soon as possible to the proper laboratory. If the Negri bodies can be demonstrated in smears made fresh from the hippocampus major or the cerebellum or in sections from those parts of the central nervous system and recognized by an experienced observer, the diagnosis is established for all practical purposes. Of course, the final test of the presence of the virus is inoculation into another animal.

Frequently the dog which bit the patient escapes unidentified. Almost as frequently, perhaps, the patient does not consider his slight wound seriously. It may be that in a particular case the dog appeared normal. It must not be forgotten that Roux & Nocard[7] found that the saliva of a dog was virulent three days before the onset of definite symptoms. Nor must it be forgotten that it is a popular fallacy that a mad dog always has wild, blood-shot eyes, foams at the mouth, carries its tail between its legs and fears water. The following information in regard to a rabid dog from Stimson[1] is worth repetition for common information:

"The dog is almost an intellectual anomaly among animals. By centuries of association with man, of a kind more intimate than any other enjoys, it has acquired a mental development far in advance of most of the domesticated animals. It is natural that psychical disturbances should be marked in this animal. When a dog shows a marked and apparently causeless change of its habitual disposition, suspicion of rabic infection should be entertained, especially if an opportunity for such is known to have occurred. This change may be either in the direction of becoming more morose, sullen, and irritable, or of showing unusual affection and desiring to be petted more than usual. Fatal infections of man have occurred during this stage through licking of abraded or scratched surfaces by an over-affectionate animal, or by bites received in a period of unnatural playfulness.

"A very characteristic symptom is the change in the character of the voice. It has been aptly described as resembling bellowing of a tired hound which has been chasing game for a long time. Instead of the normal succession of sharp barks, there is a hoarse howl followed by an unequal series of barks, lower in pitch than is normal, the jaws not being completely closed between them as is normally the case.

"The rabic dog, whatever his initial symptoms, soon becomes restless, lying down and getting up again repeatedly. He is easily startled, and growls and barks on slight provocation. In the furious type, after a few days or less of inquietude, he may suddenly leave home, wandering off for many miles perhaps, to return in a day or two, emaciated, wounded, and utterly changed. During the period or 'running mad' he may have bitten many persons and other animals. He may bite and tear his own flesh at the site of the wound, and seems impelled to bite anything that comes in his way, as if some relief could be gained in that way. He can not be said, as a rule, to fight with other dogs. He bites them and passes on, but does not go out of his way very much to attack them. His main object seems to be to keep moving, as if to escape something.

"The popular idea of a mad dog is a raging animal with glaring eyes, with froth flying

from his jaws, and the tail carried between the legs. A picture of such a dog appears as the frontispiece of Rougemont's treatise on rabies (1798). This is an unusual picture in actual experience. The dog looks sick, takes no interest in his surroundings, but trots ahead, perhaps with wavering gait. The conjunctiva is, it is true, usually injected, but frequently not enough to attract attention, and the tail may be carried over the back. It is the rule that dogs in this condition have no appetite for their accustomed food and frequently swallow indigestible objects, such as sticks, stones, straw, etc. Swallowing is difficult and, later in the disease, impossible.

"Convulsions of greater or less distribution now appear, and the animal may die in one. More frequently a paralytic state supervenes. The dog drags himself to a secluded place. The hind legs are usually paralyzed first. It is often thought by the observers that his spine has been injured. The jaw drops from paralysis of its muscles. The tongue is apt to be dry and may be blackened. A black discoloration of the roof of the mouth is no criterion whatever for rabies, as it occurs in healthy dogs. Salivation may be profuse, the saliva drooling from the mouth. This is not incompatible with the dried condition of the tongue. The animal becomes much emaciated. Death is caused by the ascent of the paralysis to the respiratory centers.

"The paralytic form is quite frequent among dogs and offers peculiar danger to man. These are the cases where the owner or sympathetic bystander endeavors to remove an imaginary bone from the throat and becomes bitten or scratched. Spasms of deglutition and the animal's action during them, and paralysis of the throat muscles, strongly suggest an obstruction in the throat. It is a mistake to suppose that rabid dogs have any fear of water. They are intensely thirsty and desire to drink, but when the paralytic condition affects the throat muscles they are unable to swallow. They are so far from having a fear of water that they sometimes swim rivers while in the furious stage, as observed in ancient and modern times."

In arriving at a clinical diagnosis too much attention must not be paid to the supposed period of incubation. It is so variable that any bite within a year or more past must be considered seriously. Hysteria, tetanus and mania must be eliminated. Hypersensitiveness to drafts of air is not simulated in hysteria. This may be tested by stepping unobserved behind the patient and fanning him. A convulsive seizure induced in this way would tend to strengthen a diagnosis of rabies. The absence of trismus and continuous spasm serve to differentiate rabies from the former, as does the long period of incubation. Mania seldom takes the form of rabies and can be differentiated on etiologic considerations. The blood may show a leucocytosis. Aside from these considerations chief dependence must be placed upon the laboratory examination of the dog's head if that is possible.

The local wound should be touched everywhere to its depth with nitric acid. This is more effective than carbolic acid or silver nitrate. The actual cautery is efficient only if immediate and thorough and involves too much suffering and destruction of tissue to be in common use. The patient should endeavor to keep himself in good general health. Nervous excitement, fatigue and all forms of excess, especially alcoholic, are to be avoided. Cold bathing and exposure to wet and cold are unfavorable. The one effective measure is the prophylactic immunization according to Pasteur's method, with which the patient should always be given the benefit of the doubt. After the disease has developed the patient can only be treated symptomatically with morphine, bromides, chloral, chloroform, with protection from drafts, strong light, vocal suggestions or other external stimuli and with rectal feeding, to save him from as much suffering as possible.

It should be stated in fairness, however, that paralysis sometimes follows the antirabic treatment. Hasseltine[8] reports in detail two such cases which were the only two among 567 cases treated at the Hygienic Laboratory in Washington, up to the time of his report. Both patients recovered apparently with no permanent ill effects. Hasseltine believes that paralysis is due to anaphylaxis resulting from the injection of foreign animal tissue (rabbit's cord.) "The occurrence of paralysis" he says, "may be explained as a manifestation of individual hyper-susceptibility analagous to the comparatively rare cases showing untoward effects after the administration of diphtheria antitoxin."

"When a patient," continues this author "begins taking the Pasteur treatment, one of the questions almost invariably asked is, 'Is there any harm done if the case is not infected with rabies?' or, 'Are there any after effects of the treatment?' These questions are best answered by telling the percentage of cases showing any ill effects and letting the patient judge for himself.

"With rabies apparently increasing steadily among the canine population of the United States and a wider spread of knowledge of rabies, the time is fast approaching when all physicians will be consulted regarding rabies and its treatment. It is the duty of those connected with this work at present to report serious complications and sequelae, so

that physicians in general may be able to give proper information and advice to those consulting them. To do this it is necessary that all cases be reported as fully as possible."

In the reports on file at the Hygienic Laboratory from various Pasteur Institutes which obtained virus from the Hygienic Laboratory and were under the supervision of their respective State and City Boards of Health, Hasseltine found only two cases of paralysis noted, the whole number of cases treated being 3115. One was reported from California in 1910 as "paralysis, one case, very slight." The second was reported from Alabama in 1911: "One case of paralysis, transient."

A few other cases of paralysis were reported by Price[9], Geiger[10], Rochaix & Durand[11], Mejia[12] and Levy [13]. While these cases show that the Pasteur treatment is not entirely without danger, the percentage of such untoward effects is so small compared with the practically certain death which follows developed rabies that any person with common sense would prefer to run the slight risk of treatment than face the certain prospect of a horrible death.

There is no chance of giving the disease to a human being through the Pasteur treatment with attenuated virus.

TREATMENT IN KENTUCKY

There is no reason why any person in Kentucky, infected with rabies, should go without the recognized anti-rabic treatment. Through the State Board of Health Laboratory in Bowling Green and through the United States Public Health Service, working with the Louisville City Board of Health and the Louisville City Hospital, emulsified cords for the Pasteur treatment are being furnished by the Hygienic Laboratory of the Public Health Service in Washington without charge to needy patients who cannot afford to pay for the treatment. To persons in Kentucky and outside of Louisville the treatment is administered at the State Health Laboratory in Bowling Green, free of charge. To needy persons in Louisville the treatment is administered by a Public Health Service officer. In any case outside of Louisville the head of the suspected dog should be packed in ice and delivered as soon as possible to the State Laboratory. In any case in Louisville notice should be given immediately to the Board of Health Laboratory in the City Hall and advice secured for the proper handling of the suspected dog and the patient bitten. It is extremely important that the dog which bit the patient be caught at once and held for the disposition of the Health Department. In any case in which the dog cannot possibly be secured the patient should be given the benefit of the doubt and receive the Pasteur treatment. Patients who can afford to pay for the treatment should go to their private physician who can secure reliably prepared virus from the better commercial houses like Mulford or Squibb or Lilly. Patients who cannot afford to pay for their treatment are being cared for by the Federal Government through the United States Public Health Service. Applications for such treatment should be made at the Health Department of the City Hall or at the United tSates Public Health Service office in the Federal Building. To September 1st, 1918, twenty-eight heads have been examined this year under the direction of the Public Health Service, mostly in the laboratory of the City Health Department. Fifteen have been found positive and thirteen negative. Thirty-five persons have been treated in Louisville under the United States Public Health Service and about ten cases by private physicians. No unfavorable symptoms have followed the administration of the treatment in any case and no deaths have occurred in treated cases.

The directions furnished by the Public Health Service for use in the administration of the rabies virus are as follows:

DIRECTION FOR THE USE OF RABIES VIRUS SHIPPED FROM THE HYGIENIC LABORATORY, U. S. P. H., WASHINGTON, D. C.

The virus should be kept until used in an ice box or other cold place. This material is perishable and must not be kept on hand for future use. Each bottle contains the number of doses required, until further shipments are made, of cord dried for the number of days indicated on the label. Further shipments of cord to complete treatment already begun are made without further request.

Dose: Each small section of cord (about 1/8 cm.) constitutes one dose.

The following equipment is necessary for making and using the emulsion:

Physiological salt solution.

Alcohol.

Absorbent cotton or gauze.

Glass or porcelain mortar and pestel (capacity 10-20 c.c.)

Thumb forceps.

Hypodermic syringe (at least 3 c.c. capacity) with large needle.

Glass pipette, 5c.c., graduated at least to 0.5 c.c.

Small conical test glass or beaker, or other small container.

These must be sterilized, and then the instruments, etc., rinsed in sterile salt solution. Aseptic technic throughout.

To make the emulsion: Remove one section of the cord from the bottle with the thumb

forceps and rinse it free of glycerine with sterile salt solution in the small glass container, place it in the empty mortar and, without the addition of any fluid, rub up as finely as possible. Then 2.5 c.c. of the salt solution are gradually added by means of the pipette, taking care between the additions of salt solution to rub to a uniform consistency. Draw the full amount of the emulsion into the syringe.

To use. Scrub the skin at site of inoculation with alcohol and inject the emulsion into the subcutaneous tissue, being careful not to injure muscular layers or visible veins. Alternate successive injections on the two sides of the anterior abdominal wall.

For the schemes of injection, see accompanying sheets.

A record should be kept in each case, giving essential patriculars concerning the patient, his injury, treatment and subsequent history, with dates; and, also, concerning the biting animal and the basis upon which the diagnosis of rabies was made in it.

SCHEME FOR INTENSIVE TREATMENT.

DAY.	CORD.	AMOUNT INJECTED ADULTS.	5 to 10 YRS.	1 to 5 YRS.
1	8-7-6; 3 injec's	2.5 c.c.	2.5 c.c.	2.5 c.c
2	4-3; 2 "	2.5 c.c.	2.5 c.c.	2.0 c.c.
3	5-4; 2 "	2.5 c.c.	2.5 c.c	2.5 c.c.
4	3; 1 "	2.5 c.c.	2.5 c.c.	2.0 c.c.
5	3; 1 "	2.5 c.c.	2.5 c.c.	2.0 c.c.
6	2; 1 "	2.5 c.c.	2.0 c.c.	1.5 c.c.
7	2; 1 "	2.5 c.c.	2.5 c.c.	2.0 c.c.
8	1; 1 "	2.5 c.c.	1.5 c.c.	1.0 c.c.
9	5; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
10	4; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
11	5; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
12	3; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
13	3: 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
14	2; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
15	2; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
16	4; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
17	3; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
18	2; 1 "	2.5 c.c.	2.5 c.c.	2.0 c.c.
19	3; 1 "	2.5 c.c.	2.5 c.c.	2.0 c.c.
20	2; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.
21	1; 1 "	2.5 c.c.	2.5 c.c.	2.5 c.c.

CONCLUSIONS

1. A male died of rabies after a period of incubation lasting four months and two days and following a bite which was not regarded seriously.

2. The antirabic treatment will prevent death in practically 100 per cent. of cases if it is properly administered after inoculation and before the onset of the symptoms. Practially 100 per cent of developed untreated cases of human rabies die.

3. In case of doubt treatment should be administered and the diagnosis made afterward if possible.

4. There is no reason why any patient in Kentucky who is suspected of having been infected with rabies should not receive proper treatment. Indigent patients may be treated with United States Public Health Service virus at the State Laboratory or, in case of Louisville patients, on application to the local Health Department or the United States Public Health Service office in the Federal Building.

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DISCUSSION:

Major L. D. Fricks, U. S. Public Health Service: It is known that at least two persons have died from rabies in the City of Louisville during the past six months. This is not a great number of deaths, to be sure, as compared with those occurring during the same period from tuberculosis, for instance, but when the suffering of the patients, the mental anguish of relatives and friends, the helplessness of the attending physicians and the utter needlessness of these deaths are considered, they stand as a serious indictment of the apathy and ignorance which go to make up public sentiment in the community, and are a grave reproach upon the efficiency of the police and health administrations of the city.

The first death reported occurred in a young man, 24 years old, and whose twin brother had been called to fight for his country while he remained safe at home to care for his aged parents. He was bitten on the hand by a sick, pet puppy and died three months later at the city hospital after undergoing intense suffering.

The second case was a little 12-year-old girl, who was sent by her mother to the grocery store only a few doors away and while on this common household errand was attached on the street by a stray dog and severely bitten.

Under the conditions existing in Louisville the same thing might happen to any child at any time unless it is constantly kept in doors or under close surveillance.

It is not too much to say that the streets and beautiful parks of Louisville, the children's playgrounds, are absolutely dangerous as such, unless the little tots are attended by some older person.

There are, at present, seven persons in the city who have been bitten recently by rabid dogs, who are now receiving Pasteur treatment furnished by the United States Public Health Service and City Health Department in order to prevent the development of rabies in them, which, once developed, is invariably followed by certain death. The Pasteur treatment for the prevention of rabies in exposed persons is designed to confer immunity during the period of incubation of the disease by the inoculation of attenuated rabies virus. The principle involved is exactly the same as the vaccination with cowpox of a person exposed to smallpox. In the Pasteur treatment the dried spinal cords of rabbits which have been inoculated with fixed rabic virus are employed and the treatment is completed during the period of incubation of the disease.

Neither of these two persons who died from rabies received this treatment, because it was not suspected at the time they were bitten that the dogs were rabid. The puppy died a few days after biting his owner, but no importance was attached to the bite until the owner developed symptoms of the disease three months afterward. Then it was too late for effectual treatment of any kind.

In the case of the little girl, a neighbor's dog was suspected and kept under observation for several weeks. This dog remained well and therefore the child was not believed to be in danger. The facts were the child was bitten just at dark and although her mother and two young men who were attracted by her screams saw the dog, in the excitement it was allowed to escape in the darkness without being positively identified. Later the neighbor's dog was suspected, but since it remained well, while the child died of rabies, the probability is that the guilty dog escaped.

The two regrettable cases emphasize the importance of treating all dog and cat bites seriously. The wounds should be immediately cauterized with nitric acid or tincture of iodine, applied by a competent physician. The offending animal should not be allowed to escape, and even though it shows no symptoms of rabies it should be kept in secure confinement under observation for a period of at least two weeks, because the dog may convey the infection before it has developed marked symptoms of the disease. The City Health Department should be notified promptly of any dog bite or any suspiciously acting animal in order that an investigation may be made. The heads of all suspected animals that have been killed should be sent at once to the City Health Department for examination and diagnosis.

Rabies is not a new disease. It is as old as medical history and as widespread as the globe, except in those islands, such as Australia, New Zealand and the British Isles, where dogs are effectually quarantined before admission to their shores. All warm-blooded animals are susceptible to rabies infection, but the carnivorae—dogs, cats, wolves, coyotes and skunks—are the ones usually infected because of their biting habits. Rabies is acquired in no other way than from another rabid animal, and the spontoneous origin of rabies in dogs from whatever cause, as formerly believed, is entirely without foundation. The same thing may be said for the "dog day" fallacy. Rabies is just as prevalent at one season of the year as another, except for the slight difference in living conditions of both men and dogs.

Because of their habits and their intimate relations with man, dogs are more commonly responsible for the disease among human beings than any other animal. As an exception to this rule there occurred two years ago a widespread epidemic among the coyotes of the Rocky Mountain regions. This epidemic was investigated by Surgeon L. D. Fricks, of the United States Public Health Service, who found that a number of people had been bitten by rabid coyotes, which would wander into the village streets or open doors of the farmhouses. The great majority of the people who were bitten were given the Pasteur treatment promptly because they knew that a coyote which acted in such an unusual manner must be mad. Hence only a few deaths occurred, but the property loss was enormous. In the State of Nevada alone the loss of livestock, principally horses and cattle, amounted to more than $250,000.00. The one good which resulted from the epidemic was that it practically exterminated the coyotes over a vast territory.

The popular idea of a mad dog as a raging animal with glowing, red eyes, the froth flying from his jaws and the tail carried between the legs is usually wrong. The dog looks sick, takes no interest in its surroundings, but trots ahead perhaps with a wavering gait. True it will snap at any object that comes directly in its way, but rarely will go aside to attack a person. Within a few days after it is taken sick the dog generally wanders away from home and may travel many miles, snapping and biting as it goes until death overtakes it. In this way human lives are endangered, valuable livestock is destroyed and rabies is perpetuated through the dogs of the community. For this deplorable condition we have public sentiment only to thank. There are adequate city ordinances and state laws with which to completely eradicate rabies within six months, but they are not enforced.

True the majority of real human beings have a tender spot in their hearts for a dog; but they should also also have a due regard for the welfare of other human beings to say nothing of the horses, cows, pigs and sheep. A good dog is entitled to good care, but the stray cur should be shot. The ownerless dog should be destroyed, painlessly, at all times. And for the purpose of

sanitary law the ownerless dog should be defined as a dog unprovided with a collar and license tag of the current year. All owned dogs should be licensed yearly. The license fee will aid in the control of rabies by rendering ownerless dogs recognizable, by reducing the number of dogs kept and by restricting the ownership of dogs to those who have some sense of their value and therefore take better care of them. All dogs should be efficiently muzzled until the rabies infection, now so prevalent among dogs in Jefferson county, has been eradicated. Muzzling ordinances based on supposed seasonal prevalence are illogical, but under the conditions existing in Louisville now this law should be enforced immediately without fear or favor.

If the above measures are taken promptly and carried out effectively rabies in the county can be stamped out within six months and the people greatly relieved.

Clarence H. Harris, Louisville: With reference to the positive statement made by Dr. Graves regarding hydrophobia, in spite of the fact that we do occasionally see people die from so-called hydrophobia, there are yet doctors in this city and in this State who do not believe that such a disease exists. There are people innumerable in this city who do not believe rabies exists. Facing such a condition as that, the health authorities must take some positive action to eliminate this menace. As a matter of course, the only way to get rid of the danger is to get rid of the cause of the danger, and that is the stray dog. I don't care a continental for dogs, and the farther they stay from me the better I like them. The permission of allowing dogs to run pell-mell through the streets and roads of this county must be stopped by the insistence of the medical profession. At present a law is necessary to destroy a rabid dog in this city. An ordinance exists by which no one but a citizen of this city can impound a dog, and then he must be twenty-one years old, and if that dog is impounded he must be kept there a certain length of time and an order obtained from the police court before the animal may be sold to the highest bidder for cash. As a matter of course, we pay no attention to that sort of thing.

As county health officer, it has been my endeavor in acting in that capacity to get at the bottom of the thing and get the dog and lock him up.

One point I want to emphasize which Dr. Graves and Dr. Fricks brought out is the inability or the negligence that exists at the time of the reception of the bite. I say to the people, "Do you know positively that this is the dog that bit this person?" If we can know that positively, the only thing necessary to do is to quarantine the dog. If the symptoms of the animal amount to much, we do not know how to interpret them. I do not know anything about the symptomatology of dogs with rabies, but if the dog is sick; if he shows any disposition to act unlike himself at all, he should be put up and in ten days or two weeks he will probably die. Then his head should be taken off without mutilization. It is a mistake to send the dog's head, mutilated, to the laboratory, and expect a pathologist to find Negri bodies. It is easy to kill the dog by injecting ten grains of strychnine between his ribs; he is gone in a second, and that does not interfere with the findings. I heard a man say not long ago that a dog with the premonitory symptoms of rabies would have a dilated left pupil, but he could not explain why or how because he did not know. It is hard to tell whether you have a dilated left pupil in a dog. If he has shown any evidence of being ill, take the head off and send it to a pathologist. The idea of protecting the dog when human life is at stake is ridiculous.

I treated three men who were bitten by a rabid mule a year or more ago. This mule showed symptoms of hydrophobia. He was tearing himself to pieces; he bit two or three other mules, and it was thought the mule was bitten by a rabid dog. It had bitten three or four of the employees of a provision company on East Market street. We immunized the men, and immunized the mules, and they got along all right. There is no danger in the use of this attenuated virus for hydrophobia. The thing to do is to get hold of the dog and do away with every dog that runs around the street. Isolate the dog and take no chances. If you are mistaken about the diagnosis, give immunizing treatment and thus prevent or guard against danger from him.

C. W. Kavanaugh, Lawrenceburg: Every dog that bites a human being ought to be killed and his brain examined to see whether it is necessary to give the patient it has bitten the treatment. If we wait a week or two weeks to see whether the dog is going to die or not the opportunity may be lost to give the treatment in time.

W. Ed. Grant, Louisville: It is highly important that the dog supposed to be rapid, that has bitten anyone, should be kept alive and kept in quarantine for ten days. In this way, we can make sure of our diagnosis. If rabid, he will die before the ten days period has passed. This will prove the necessity of giving anti-rabic serum to the patient. If the dog remains in good health there is no necessity for any further treatment or anxiety.

For eight years as City Health Officer I have had these cases to contend with and have found it difficult to get the police to understand what a mistake it is to kill the dog that is supposed to be rabid and send his head to the laboratory. It makes so much unnecessary laboratory work, besides the laboratory expert will sometimes overlook the Negri bodies when present in the brain he is examining.

Muzzling stops the spread of rabies and where this is practiced, the disease disappears.

I have been much interested in this excellent paper presented by the Essayist, and I am sure that it will help the physicians to understand how easy it is to combat this preventable disease.

Curtis B. Johnson, Earlington: A few years ago I was unfortunate enough to be bitten by a rabid dog and I took the treatment. Since that time in our community anybody bitten by a dog could take the treatment if they wanted to. We killed the dog and sent the head away immediately. The State law allows you to have a dog killed that has bitten anybody. If you have the dog killed immediately and send the head away and have it examined, you can eradicate rabies.

RABIES; REPORT OF A CASE.*

By Ben Vaughan, Louisville.

The subject of this report was a girl aged twelve years whose previous health had been good exceeping for the customary diseases of earlier childhood. The family history was negative. This girl was bitten in the right wrist by a dog on December 20th, 1917. The bite was extensive the animal's teeth coming together in the flesh and making a very ugly-looking wound.

I saw the patient about an hour after she was bitten, and sterilized the wound with iodine and ziratol; but the bite was so deep that it was impossible to sterilize it thoroughly. Healing of the wound progressed normally, and when I saw the patient January 10th, 1918, was almost well.

I saw the patient no more until called about ten o'clock P. M., on March 20th, 1918. I found her somewhat nervous, with a temperature of 102 degrees F. The family thought she was "taking measles" as she had been exposed, and I was inclined to agree with them. She had then been ill two days.

I saw the patient the following day about six P. M. She was then extremely nervous but entirely rational and complained about some difficulty in swallowing; or, as she expressed it, she "could not breathe when she swallowed." A gurgling noise was noted when she drank water or milk, but she swallowed a few bites of egg without difficulty.

I asked Dr. J. H. Hester to see the patient with me in consultation about an hour later, and he could find nothing wrong with either the nose or throat. At that time the "heart was running wild," beating very hard and rapidly. She had several convulsive paroxysms during the night. These attacks were unlike epileptic seizures or any other type of convulsions I had ever seen. The patient was exceedingly nervous, and much foamy or frothy mucus was expelled from the mouth. However, she remarked: "I am all right if it were not for these spells."

Dr. W. F. Boggess saw the patient with me in consultation about ten o'clock the next day. She had then grown much worse, was extremely cyanotic, and her pulse was very rapid but not so "bounding" in character. The cyanosis rapidly increased and about one o'clock P. M., the patient died in a convulsive paroxysm. She virtually strangled to death. Based upon the foregoing history we attributed her death to rabies. The brain of the child was examined and Negri bodies reported present.

A word may be permitted as to why Pasteur treatment was not given in this case. The family was positive that the dog which bit this child belonged to a neighbor, and that the animal was perfectly healthy. The dog was well after the child died, and I suppose is living yet. The child was bitten about dark and of course they might have been mistaken as to the identity of the dog.

It was reported that the same dog had also bitten several other children in the neighborhood, but so far as I am informed no other cases of rabies have developed. Of course whether or not it was the same dog I am not prepared to positively state.

If I had another case of extensive dog bite on any part of the body not protected by clothing, I would give the serum treatment.

DISCUSSION:

Lillian H. South: Since the State Board of Health began the treatment for the prevention of rabies in 1911 we have treated eight hundred and thirty-seven cases with two fatalities. One of these was a five-year-old child bitten by a cat which had also bitten four other children who were under treatment at the same time. This child had received no treatment of the wound, whereas the other children had. The child was sent to us for treatment nine days after having been bitten, and on the eighteenth day died of rabies. The second fatal cases was a young boy who came for treatment twenty-seven days after being bitten. He died about three months later and it was reported that he had all the symptoms of rabies. The complete course of treatment requires three weeks; the incubation period of rabies is about seventy-two days; the height of immunity is not reached until about two weeks after completion of the treatment.

We are oftentimes confronted with a history such as Dr. Vaughan has related. A child will be bitten by a dog on the street, and the dog then disappear. No one is able to positively identify the dog even if he is seen again. In such cases we always advise the anti-rabic treatment, because one of the characteristics of a rabid animal is that it will wander away and

*Read before the Jefferson County Medical Society, Louisville, Kentucky, May 20th, 1918.

probably never return. Of course under such circumstances we are unable to secure the head of the dog for laboratory investigation. We want the head of the dog sent to the State laboratory in every instance if possible for examination. The specimen should be carefully packed in ice in warm weather because the brain quickly undergoes putrefactive changes.

If Negri bodies are present they may be easily demonstrated by staining with methylene blue and fuschin. These bodies are about the size of erythrocytes. We never make a diagnosis of rabies, however, unless Negri bodies are found within the ganglion cells. If Negri bodies are found we so inform the patient and advise immediate treatment.

The injections are made into the abdomen, using one side the first day and the other side the next. The medicament consists of an emulsion of the spinal cord of a rabid rabbit dried over potassium. A total of twenty-five injections are administered during the period of twenty-one days. The dessicated cord comes to us in graduated doses marked for the day on which the injection is to be made. The dried cord is first washed in distilled water then emulsified with saline solution and injected.

You may recall that a few years ago a physician living not far from Louisville and his daughter were bitten by a presumably rabid dog. This gentleman became much frightened and drove to Louisville in an automobile where he called at least fifteen doctors in consultation. He insisted upon being treated at once, but there was no treatment to be had in the city. He telegraphed Parke, Davis & Co., of Detroit, Michigan, and they replied that they could not furnish it for several days. While he was a practicing physician in an adjoining town, he did not know that the State Board of Health furnished free treatment for rabies! Dr. T. H. Baker, of the Louisville City Health Department, now furnishes the treatment here or it may be obtained from the various commercial firms at $25.00 for the twenty-five treatments. The treatment is furnished by the Public Health Service at Washington, D. C., free of charge to the state and city boards of health.

There is always more or less rabies throughout Kentucky. We average about six animal heads per month in our laboratory, and of these probably thirty per cent are positive. If we could get authority to order all dogs muzzled, the disease could be banished entirely.

C. H. Harris: For a long time some of the better men in the profession were skeptical about the existence of such a disease as rabies. Dr. Vaughan's patient may have had toxemic paralysis, i.e., the influence of toxic material upon the glosso-pharyngeal nerve may have produced the symptoms. The case is out of the ordinary in having such a long period of incubation. The usual incubation period of rabies is about six weeks. When it is longer Osler claims it is questionable whether the disease is rabies. The so-called "pseudo-hydrophobia" may make its appearance earlier, sometimes within three or four days after a dog bite.

It is untrue that people with rabies cannot swallow anything. Usually it is the effect on part of the patient to induce the muscular action necessary to accomplish the act of deglutition which causes a reflex spasm and this prevents swallowing. It is a nervous manifestation pure and simple not paralysis.

The layman has the idea that an individual with rabies "barks like a dog and froths at the mouth." This is also a fallacy. An effort to swallow and breathe at the same time may so agitate the salivary excretion as to make it frothy, but there is no characteristic "frothy saliva" of rabies.

We were taught that a dog bite on the hand or face, in other words on body surfaces well supplied with sensory or motor nerves in close association with the great cerebro-spinal system, that such a wound was more dangerous than one elsewhere. We must remember, also, that age has a great deal to do with the danger associated with the bite of a rapid animal, the young being more susceptible than older individuals. Little benefit can be expected from cauterization. When we remember the rapidity of the circulation, the entire circuit being completed within twenty-two seconds, there is very little chance of completely eliminating the poison by cauterization.

What is necessary when one is bitten by an animal the carrier of rabies? The animals most frequently the carriers of rabies are: (1) the dog, (2) the cat, and (3) the wolf. What is the necessary scientific procedure? For a long time people believed if a dog bit you to-day and did not ultimately become mad, you never would develop rabies! That is another foolish idea. The dog must have the specific poison in his salivary glands at the time the bite is inflicted, otherwise there can be no infection with rabies. The proper procedure when one is bitten by a presumably rabid animal is to preserve the animal in a room well lighted and ventilated where he can be watched and fed without irritation. If the animal shows no indication of serious illness within a few weeks, you may feel certain that he is not rabid. If you have any doubt about the animal being rabid, he should be immediately killed and the head sent to the laboratory for examination, which can be done very quickly. I had in my office yesterday the head of a presumably rabid cat and the examination was completed to-day. The next thing is to begin treatment of the patient by the injection of an emulsion of the spinal cord of a rabid rabbit in gradually increasing doses until the patient is

placed in a state of artificial immunity. The immunizing of the patient is something which has to be accomplished gradually—we cannot do it all at once. Strong agents cannot be injected into the human body without some chance of infection, and to tell the patient there is no danger is to make a mistake.

You cannot make a positive diagnosis of rabies in an animal without examining the brain, although certain veterinarians say this is possible. Let me relate a case that occurred several years ago. In my neighborhood there was a valuable dog that we thought more of than we did of some human beings; he was kept away from other dogs. On Sunday night he ate a hearty meal and on Monday he became ill. I went to see the dog and found him drooling saliva and showing a disposition to stand on his feet, but he seemed to be weak in his front quarters. Thinking he might have something in his throat, I introduced my hand into his mouth but found no evidence of a foreign body. I gave him a large dose of castor oil, and that afternoon he began to show signs of being seriously ill. We called a veterinary who said the dog had rabies. There was no disposition to bite, and the dog had absolute paralysis of the lower jaw. I suggested that there might be some toxic material acting on the nervous system which produced the symptoms, but the veterinary concluded that the dilated pupils, the drooling of saliva and the paralysis of the lower jaw constituted sufficient evidence upon which to make the diagnosis of rabies. He killed the dog and the head was examined at the laboratory, but his diagnosis was not confirmed by finding the Negri bodies.

W. E. Fallis: We have heard men say "kill all the dogs and you will have no more rabies!" I am a friend of the dog and expect to be so long as I can find enough to feed him without taking anything away from my family! If we could kill every cur-dog in the community we might get rid of rabies, because the man who has a good dog thinks too much of him to allow him to run about, and he is worth too much to take any chances. However, not every dog that is bitten by a rabid animal will develop rabies. We lost eight from our kennels last year from rabies. There was no question about the diagnosis, because anyone who has seen many cases of rabies in the dog can make the diagnosis the moment he sees the animal. They all have the same prodromal symptoms. A week before the dog develops any paralytic symptoms he will be extremely nervous, irritable and restless.

I would like to ask Dr. Vaughan if his patient could swallow? If she could then she did not have rabies. I never saw a rabid dog that could swallow. Of course this observation applies to the dog, but the same type of infection should produce similar symptoms in both animals and human beings. At our kennels we had three dogs with rabies at one time and watched them carefully. We fed them solid food which they would chew and then eject from the mouth as they could not swallow. They had no semblance of frothing at the mouth from increased salivary action; two of them died without having any increased salivation, yet they had typical rabies. One dog bitten in my kennel was seen by the best veterinarian in the county who said the dog was too valuable to be killed and took him home. In four weeks to the day from the time this dog was bitten he developed typical rabies. He would attempt to bark but could not do so; mad dogs never bark although they may make the attempt. The dog was then killed and the brain was examined Negri bodies being found.

Ben Vaughan (closing): I believe the cases reported before our meetings should always be discussed on their merits. I recognize the importance of having the brain examined in the laboratory to determine whether Negri bodies are found before making the diagnosis of rabies. This patient presented as typical a text book picture of human rabies as I ever expect to see. The time of the onset, the temperature, the nervous manifestations, the difficulty in swallowing, and finally the cyanosis and death, make the diagnosis unmistakable.

In regard to a person not being able to swallow if he has rabies: This girl merely complained that she could not breathe and swallow at the same time. There was a decided gurgling noise in the throat when she attempted to swallow liquids.

Strumpell gives the average period of incubation in rabies as three months. Various other authors state from nine days to three or four months.

The dog which bit this child was seen by four or five people including the mother of the patient and they all agreed upon its identity. I advised them to watch the dog which they did religiously; he was never sick, and is living to-day. It was never denied that this was the dog, but mistakes will sometimes happen. Of course no one can be positive when you see a man, regardless of how well you know him, that he is the right man. You may say he looks like the man in question, but you cannot be positive about his identity. This dog was examined by the health authorities and no signs of rabies found.

If I encounter another case like the one reported I shall certainly resort to the Pasteur treatment.

Patronize our advertisers and convince them that Kentucky physicians know how to reciprocate.

ETIOLOGY AND PATHOLOGY OF FISTULA IN ANO WITH SUGGESTIVE TREATMENT.*

By W. E. Reynolds, Hopkinsville.

It isn't the scientific discoveries that count, it's getting the scientific world to believe them. I am before this intelligent body with scientific instructions which will add more to literature on this disease, than has been written in fifty years which about includes the period of specialism on rectal diseases in the United States. Not only this, but to condemn many things now taught, and to show how ridiculous the ideas that are advanced on fistula.

Dr. J. M. Mathews, in presenting his work on the rectum, says that many things that are taught, are not true, and that many true things have not been taught. And I could not make my paper more impressive than to use his language, when he says "I have therefore not taken other men's opinion as my guide, but have accepted as truths only those things which could be substantiated by fact, and here recorded them."

I hope with your close attention to demonstrate both by the anatomy of the parts and common reason, that the instructions given by our authorities on some parts of our subject is erroneous, and impossible. And in order that you may better understand the issue I take, I refer you to the diagram in Gray's anatomy.

We trust we will not be thought offensive if we take issue with all authorities and claim to merit any great distinction in the subject now under discussion.

You will first observe in the diagram the levator ani muscle, the floor of the pelvis. Arising from the symphysis, laterly from the pelvic fascia along the line of its attachment, with the obturator fascia, and posteriorly from the spine of the ischium on each side of the pelvis. Its anterior fibers pass down and backwards around the prostate gland to unite with the fibers of the opposite side beneath the neck of the bladder. The middle fibers pass downward and inward around the rectum, being attached to this organ and interlacing at their lower ends with the fibers of the external sphincter muscle, while others unite posteriorly and pass backward to be inserted on the anterior surface of the coccyx. The posterior fibers pass downward and backward and are inserted upon the side of the coccyx and lower part of the sacrum.

I will next call your attention to the ischi-rectal fossa, back of the perineal space, and separated from them by the wedge-shape border of the perineal fascia, and the transverse perineal muscle, which compose the ischio-rectal space, and quite surrounds the lateral and posterior portion of the anus. Each fossa is an irregular wedge-shaped space, its base being directed downward, and each space is enclosed by perineal fascia, with the transverse perineal muscle in front, the levator ani muscle above, the obturator fascia, the obturator internis muscle, the ischium and the sacro-ischiatic ligament external, the anus internal, the gluteus maximus muscle, the sacro-sciatic ligaments and the coccyx posterially, and the skin and superficial fascia below. These spaces are filled by fat and cellular tissue, through which ramify blood-vessels and nerves. The fat in these spaces is supported by network of connective tissue bands, which divide them into numerous compartments that communicate with each other through the lymphatics and blood-vessels. Next we wish to call your attention to the anus. The wall of the canal is composed of muco-cutaneous, fibro-cellular, and muscular layers. The muco-cutaneous layer is smooth, shining and glossy, and contains a few glands and blood-vessels, but extravagantly supplied with nerve-endings. The fibro-cellular layer or middle division is chiefly cellular above Hilton's white line, below this point it develops into a thin layer of connective tissue continuous with the superficial fascia covering the ischo-rectal fossa. Now this white line, that we hear so much about, is at the junction of the internal and external sphincter muscles. The muscular layer is composed of the external sphincter, some fibers of the levator ani, the longitudinal muscular fibers of the rectum and a few of the circular fibers of the internal sphincter. The external sphincter forms the main muscular wall of the anal canal.

Now this ischio-rectal fossa or space, measures from backwards 5 to 8 centimeters, (2 to 3 in.) from side to side, 2 to 3 centimeters. (1 to 2 inches), and in depth, from 4 to 10 centimeters (2 or 3 1-2 inches) owing to the size of the patient.

Now as this space is strongly guarded on either side and above, with the anus and its muscular construction on the inner side, with only the skin and fascia to protect the lower portion, with gravitation favoring an external termination of pus, I am persuaded to say that all abscesses formed in the ischio-rectal fossa, terminate externally always, and it would be a miracle beyond the comprehension of man for pus to burrow through as strongly guarded structures as the anus with gravitation and much less resistive tissue in its favor externally.

We wish to call your attention to the re-

*Read before the Christian County Medical Society.

vised second edition of James P. Tuttle. He says many theories and conditions have been evoked why a fistula does not heal, to-wit: In the explanation of this fact the continuous passage of fecal matter and gases through the fistula, thus preventing by mechanical action the agglutination of its walls, also reinfection of the surface by such passages prevents healthy granulation and healing. This might explain why an internal incomplete or so-called blind fistula did not heal, but not a true fistula. Some claim the constant movements of the rectal walls which forms a part of the fistulous tract prevents its union, the irregularity of abscess cavity, the existence of necrotic tissue in different portions of the tract when the opening is not sufficiently large for thorough drainage. Mr. Tuttle says the whole secretion of chronicity in blind external fistula lies in two facts, first, in imperfect drainage, second in persistent reinfection, which may come through an opening into the rectum which has not been found, or through the original tract of infection by the lymphatic channels. Of the infection from some small lesion in the rectum or anal channels, the septic material being taken up by the lymphatics and carried into the surrounding tissues. Also in reference to ischio-rectal and perirectal abscesses they become circumscribed owing to a thrombosis of the lymphatic trunks. This thrombosis stops for the time the current of septic material from the original source, but as soon as the abscess opens or is incised the thrombosis in the lymphatic trunks no longer obstruct the circulation in the distal tracts. To a part of this explanation I fully agree that there is a small opening in the anus but disagree with him on the lymphatic keeping up infection, the source of chronicity of external or blind incomplete fistula.

I am inclined to admit that the lymphatics do distribute infection in all parts near the rectum, from the fact that all abscesses near this locality have that characteristic odor, while not in direct connection with the bowel. But I have yet to find in literature the true cause of chronicity in all fistulas.

Before we can understand why a fistula does not heal we will have to learn the difference between a fistula and a simple abscess opening. A fistula has a membranous tract similar to, and connected with the anus, formed within and by the generative membranes of this organ. An abscess opening has no membrane neither can it have, because of the inability to form one, and if formed would be destroyed by decomposition going on in the parts, consequently without tissue-building material furnished by the anus we can have no fistula, and without a destruction of this tissue and a preventive restoration of same we can have no cure of a fistula. Then the chronicity in fistula is a membranous tract, formed by the anus, and until the supply of mucus is cut off from the anus and destroyed we will have a fistula, and all openings around the anus without this characteristic membrane is not connected with the anus, is not a fistula, and will get well without any attention.

From what I have read on fistula, and the experience I have had in the treatment of same, and taking in consideration the anatomy of the parts, I am persuaded that the etiology and pathology of fistula have been overlooked by our authors.

Under the theory I present here, I am forced to say there is no such thing as an external incomplete or blind fistula, and I am also as much displeased with the nomenclature of internal incomplete as external incomplete fistula, either is misleading and is not a fistula until completed. A better name for the so-called internal incomplete fistula, would be an ischio-rectal abscess, with an internal or anal opening. These abscesses may last for an indefinite time owing to the size of the opening internally or into the anus, without a great amount of suffering, before they eventually open externally, then we have a fistula and not before. And until the abscess is opened either from its own progress or by the scalpel, it will be incurable, not because of its membranous formation, but because of being always filled with pus and infectious matter from the bowel and can't have proper drainage. This internal cavity or so-called blind fistula has no membrane, as this material is formed or furnished by the anus and should the muco-epithelial material get into this cavity, the epithelial cells and leukocytes held in suspension in mucus would be destroyed by this necrotic fluid in the abscess cavity. So the chronicity in this form of anal trouble is the want of proper drainage. But so soon as an opening is made and this infectious material is gotten rid of, then there is a flow of muco-epithelial deposit along the tract from the anus to form a membrane, and immediately is a fistula.

Then to have a fistula we must have a direct connection with the anus, that there may be furnished this muco-epithelial deposit along the tract, that could not be furnished by any other source only of a like characteristic or genesis, a like produces a like, for instance, we cannot expect bone infection where there is no bone, or muscle void of flesh, or mucus in a generic sphere other than, or foreign to, a mucous membrane, otherwise we would have a fistula with every ischiorectal abscess, which of course we all know is not true, as about

twenty get well which are not connected with the anus, to one that is, that results in a fistula. Again, all abscesses tend to point or make an exit towards least resistance, then taking into consideration the strong muscular resistance and mobility of the anus, and only the skin and fascia with gravitation externally, they should discharge externally always. If not, then we might have several openings in the gut with only one externally, but to the contrary, we have but one opening in the anus, and that between the internal and external sphincters, never anywhere else, while we may have many openings externally leading in opposite directions from this one opening in the gut.

Then all original ischio-rectal abscesses pathologically empty externally. If external we have no connection with the anus consequently no muco-epithelial deposit to form fistula. That all fistulas commence between the internal and external sphincter muscles within the anus, this being the weakest part of the anus, and by a continuous contraction of these muscles upon some foreign substance or inflamed hemorrhoids, an exit is accomplished and an ischio-rectal abscess is the result. If this opening be sufficiently large the pus may be emptied back into the anus, giving temporary relief, if not then an external termination, with a flow of the same material as the anus to form fistula, or I might truthfully say another gut.

I hope I have made this point clear, that a fistula commences in the anus. That from the anatomy of the parts no abscess can make an exit through the gut, from the ischio rectal fossa, and without this connection we can't have this characteristic membrane formed by the anus, and without this membrane, characteristic of the anus, is not a fistula and will get well without any assistance.

It might be possible when a fistula had existed for some time, until a well-formed membrane was intact, it might be able to reform or produce itself in other openings, as same as by the anus, having the same membrane as the anus. This, however, could only occur from an unsuccessful operation.

We wish to comment on treatment. The old original treatment was to sever the intermediate space between fistula and anus, with back cut to destroy fistulous tract, then pack to prevent adhesions or union of the fresh cut surfaces and leave fistula still intact. This operation most always necessitated the sacrifice of the external sphincter muscle, and may be a failure, from the fact of a fistulous tract entering the pus cavity beneath the tract operated upon.

There are many operations and treatments for fistula, with as many objections. The latest and thought to be the most scientific operation is a dissection of the fistula out, thereby saving the external sphincter muscle. I have seen many failures, and by scientific surgeons, in this operation, where the fistulous tract was entirely removed. This failure was due to the opening being too large in the gut to heal or close before this muco-epithelial formation from the anus get into the opening, reforming the fistula.

To make this operation a perfect success, would be to turn the fistulous stump of the tract through the opening into the gut, and ligate close to the walls of the anus. This would cut off entirely the supply of muco-epithelial deposit, thereby preventing a reformation of fistula, and if there should be a failure in removing all portions of the tract or there be some abscess cavities left, if we keep good drainage externally until perfect closure is acquired in the gut, there will be no danger of a reformation of fistula. And what may remain, or failed to be removed by the operation will be destroyed by the necrotic fluid left in the cavities, to get well as all ischio-rectal abscesses do, unconnected with the anus, turning the stump through the fistulous opening inside the gut, and ligating the same. Then inject fistula at the site of operation with carbolic acid or some other escharotic, closing all external openings so the acid may ramify all branches of the fistulous tract. This will destroy the fistulous membrane and without a supply of muco-epithelium from the anus, all fistulous tracts will heal as any ordinary abscess. This procedure of injecting might be repeated several times to be sure of success.

In conclusion let me say, I desire the criticism of any or all who may take issue, that I might clear up all points not well understood, or possibly lead to an error of my own.

Many days after I read my paper a very intellectual and well-posted physician took the issue that a pyogenic membrane lined a fistula.

I can't believe there is such a thing as a pus-forming membrane, that pus is the result of pent-up necrotic or other foreign substances in the fistula or cavities. But admitting this to be a pyogenic membrane, the origin or source is from the anus. If this be the cause we should have a pyogenic membrane covering the rectum, as it takes a like to produce a like. And as we have a mucous membrane lining the anus and rectal canal, the natural secretion would be mucous, a viscid liquid, consisting of water, mucin, and inorganic salts, together with epithelial cells, leukocytes, etc., held in suspension or solution, from which this fistula is formed.

I have never had the pleasure of a microscopic examination of this membrane, but

from every appearance that I can make out by the sense of touch, sight and cut, I see no difference to that of the anus.

PRESENT MEDICAL FEES INADEQUATE.*

By D. E. McClure, Elizabethtown.

Definition. Inadequate medical fees is a disease of insidious onset and with a marked tendency to chronicity. Historically, it is one of the oldest the medical profession is heir to. It has a wide distribution. It is said to be more or less prevalent the world over. It is epidemic in the United States and endemic in Kentucky.

Most members of the profession are susceptible to its attacks. A few seem to possess a peculiar immunity to it. It is most likely to attack its victims in the early days of their career but it has been known to attack others in their declining years after they have seemed to enjoy marked immunity. It has not been known to attack the female.

Etiology. There is no specific cause. Notwithstanding its prevalence, like measles and mumps, no investigator has been able to isolate any specific bacteria or plasmodia. Sometimes it seems to arise from pure cussedness in the individual. In others it seems to be due to a pure but misplaced altruism. At other times it seems to be due to an ambition. run wild, to be busy. Attacks have been known to be precipitated by the criticism of one's friends prodding him because he is not getting his part of the business of the community. It does not seem to be influenced by the seasons; being as prevalent in the cold and mud of winter as in the balmy days of spring; as active in the heat and storms of summer as in the delightful days of autumn.

We hope it is not hereditary.

Pathology. Its pathology is obscure. Like shingles, so few of its victims die of the disease, that opportunity for post-mortem investigation has not been sufficient to demonstrate all of its lesions. Some investigators claim they have found soft spots in the brain. Others claim that they have found evidences of a weak heart; while others, with perhaps more evidence to support their claims, assert that all the pathology is located in the nervous system which gives rise to poor facial expression in life which persists after death in a peculiar, drawn expression.

Symptoms. These are both subjective and objective. The subjective symptoms are so insidious that, in their onset, the victim can scarcely realize that there is anything wrong. His spritely step and cheery laugh belie that tired feeling and sense of impending disaster of which he is only subconsciously aware. This continues for a more or less indefinite period, depending, to a large extent upon the number of mouths to be fed in the victim's family and also upon whether he is a stay-at-home or one that likes to get out and see and enjoy some of the good things of life, But inevitably, the time comes when bills begin to arrive and the poor, deluded victim awakes to the fact that there is no money with which to pay them. He then realizes there is something radically wrong and the memory of all that chain of premonotory symptoms of which he has been only partially conscious, comes back to him and he fully realizes that he is, indeed, a sick man.

Right here is where so many make their fatal mistake. Like one with tuberculosis, he is liable to attribute his disease to the wrong cause and neglect treatment till it is too late. But if he is wise, he will seek consultation with his colleagues and then the objective symptoms are so evident that a diagnosis is easy and a cure certain unless the disease is due to an inherent weakness of character.

The objective symptoms consist, primarily, of a generally shabby appearance,—perhaps a frayed coat sleeve, patched trousers, foxy shoes or a neglected shave and a score of other minor things scarcely noticeable to any but an experienced observer. But the most characteristic thing is a peculiar, haunted expression of the face that even the most complete camouflage of elegant clothes and all the cosmetics of the barber's art can not succeed in concealing.

Some claim they have been able to make a diagnosis from the victim's socialistic talk; but I doubt it as that is a characteristic of failure in all vocations alike and is not to be depended on.

Complications. One suffering from this disease is peculiarly subject to severe complications. He will, doubtless, contract the drink habit if he lives in wet territory. He will likely smoke too much if he is called upon by many detail men, life insurance agents or mine promoters. He is nearly sure to have trouble with his neighbor. If he doesn't live in wet territory, he will become a prohibitionist. They sometimes take up Sunday School work and slumming. Relapses are not uncommon especially when a newcomer enters preempted territory.

Diagnosis. This is usually easy—it would be obvious were it not for the victim's effort to conceal his true condition. One might mistake it for hookworm disease but of course resort to the microscope will eliminate the latter. But in the absence of the microscope,

*Read before the joint meeting of Larue and Hardin County Meical Societies. Hodgensville.

the glarry fish-like eye of the hookworm victim will be readily distinguished from the ptosis, furtive glance of the victim of inadequate medical fees.

This disease might be mistaken for a certain stage of general paresis on account of the boastfulness of the sufferer. On the other hand, it might be confused with certain stages of chronic alcoholism on account of the delapidated appearance of the patients. But in this case it should be remembered that an alcoholic usually speaks well of and seems to love everybody but prohibitionists, a sufferer from inadequate medical fees knocks on everybody and everything, especially on his brother practitioners. In fact, this is pathognomonic of the disease.

Prognosis. This is usually good unless the disease is due to pure cussedness on the part of the individual or to inherent weakness of character.

It is rarely fatal. If the victim fails to get an early diagnosis and a permanent cure, there are usually sympathetic friends or relatives who come to the rescue and save him from suicide or the poor-house. And then again he may be fortunate enough to have had a brother who has learned to be a plumber or bricklayer and he comes to the rescue. Or again he may have been fortunate enough to have married some one with money or one who can sew or run a boarding house and in that way he escapes the inevitable. Some turn farmer or go into some other line of business as an avocation and thus help to put off the day of reckoning. But all these things are only palliative and mere items that vary the general prognosis and should not be considered a satisfactory state of affairs.

Treatment. This is both prophylactic and curative. As a means of prophylaxis, I would first recommend a good, clean, high-minded mother who would teach her boy to do the square, decent thing under any and all circumstances. I would next give him a sturdy, honest father who would instill into every fiber of his son's character by precept and example the ancient doctrine that "justice is one of the cardinal virtues and that under no circumstances must its dictates be disobeyed. I would next see that he obtained a good, broad education with a reasonable technical training in his profession and I would start him on his career with a determination to succeed on his own merits and not on the demerits of his colleagues. If, after all this, he should develop the disease, I would administer a full dose of attendance upon all medical societies and recommend more frequent association and consultation with his colleagues.

If this were not sufficient, I would try to get his wife on good terms with the wives of the other doctors of the community and the other doctor's wives friendly with his wife. If he were a bachelor, I would try to help him select some solid, sensible young woman that would make a good wife and mother, and were he a married man without children, in order to equalize to a certain extent, overhead expenses, and render, as far as possible, the elements of competition more uniform, I would suggest that, if there were no better means at hand, that he adopt a small family as this has a tendency to improve one's self-respect and lends a seriousness to the aspect of the future.

If all these measures fail, I would feel that I were justified in yielding his case to the tender mercies of the undertaker or the kaiser.

REPORT OF FOUR CASES OF FRACTURE OF THE FEMUR TREATED BY OPEN OPERATION.*

By W. Barnett Owen, Louisville.

Case I. Dr. H., male, aged thirty-two years, had a fracture of the middle of the shaft of the left femur, which was operated upon by Dr. Louis Frank according to the method of Lane. Eight weeks after the operation the dressing was removed. Radiographic examination at that time failed to show the formation of any callus. However, there was perfect apposition and alignment of the bone. Dr. Frank was ill at the time and the patient was referred to me.

The Lane plate was removed under general anesthesia. It was in perfect position, and no trouble was found excepting a rarefying osteitis around two of the screw holes. The Haversian canals were found closed; they were re-opened and a sliding autogenous bone inlay operation was then performed.

Six weeks later radiographic examination showed beginning callus formation. The plaster spica which had been primarily applied was removed and union was found perfectly firm, although the entire femur showed signs of atrophy due to prolonged fixation.

A long double upright brace with a pelvic band and with a joint at the hip and at the ankle fastened to the shank of the shoe was then applied and worn for six months. The final outcome was perfect.

Case 2. C. L., male aged nineteen, was thrown from an automobile against a concrete bridge, sustaining an oblique fracture of the left femur, also fracture of the left tibia and fibula at the junction of the upper with the middle third. The latter, however, were in perfect position and remained so.

*Read before the Jefferson County Medical Society.

Attempted reduction of the thigh fracture was made by the closed method. Two days later radiographic examination showed fairly good position of the bone; there was slight displacement, but no overriding of the fragments.

Four weeks afterward another picture was taken to see whether reconstruction had begun. Much to our surprise a decided overriding of the bones was found to exist. Two days later open operation was performed, the gimlet method of fixation devised by Dr. H. H. Grant, of Louisville, being employed. When the thigh was opened it was found there had been no attempt at repair, and a small amount of muscle fiber was interposed between the bony edges. The gimlets were allowed to remain in situ for six weeks; union was firm at the end of eight weeks.

A brace similar to the one described in the previous case was applied and worn for six months. Other treatment instituted was hot salt baths, followed by mild massage and active motion to re-establish normal knee function. The final outcome was perfect.

Case 3. L. L., male, aged seven years, fell from the second floor to the living room while attempting to slide down the banister, sustaining a fracture of the right lower limb just above the ankle with marked displacement of the bones; there was also a splintered fracture of the left femur which had the appearance of a sapling struck by lightning. The femur was splintered from the external condyle to the lesser trochanter. Two slivers of bone between the two main portions had to be removed.

The treatment consisted of open operation and the insertion of silver wire through holes drilled in the bone near the fracture site, and a few inches away another strand of silver wire was passed completely around the ends of the bone. Perfect apposition was thus maintained.

On the right limb open operation was performed after reduction had been attempted by the closed method. The tibia was firmly impacted, with the limb in a distorted attitude. It was necessary to use the chisel upon the bony surfaces to prize the edges apart before apposition could be secured. The result in both limbs was perfect in every way.

Case 4. J. C., female, colored, aged fifty-two, kindly referred by Drs. Ray and Lederman. This patient fell from a street car and fractured her right femur at about the middle. There was marked over-riding of the ends of the bone. This fracture was also treated by the Grant gimlet method maintained in position by a long plaster spica.

The dressing was removed at the end of eight weeks. Union was then firm, length of the limbs equal, attitude normal, and the final result perfect.

DISCUSSION:

Leon L. Solomon: I would like to ask if there is any positive advantage in the open treatment in that class of cases where fractured bones fail to unite because of some dyscrasia,—more especially syphilis? I have in mind one case in particular which occurred several years ago where fracture of the humerus in a negro failed to unite under all the methods of treatment then in vogue. An effort was even made to cause union by the application of silver wire, but this also failed. I saw the man a few days ago and the bone is still ununited.

E. S. Allen: I have frequently employed the open method of treating fractures with excellent results. As. Dr. Owen has stated, reduction by the closed method should first be tried, and the X-ray used to demonstrate whether or not apposition is perfect.

I recall the case of a boy who had fracture of the femur extending almost from the knee to the hip—the fracture line was about eight inches—in which there was decided twisting and overriding of the fragments. Dr. Grant's fixation apparatus was used reinforced by Buck's extension and plaster, and a perfect result was secured.

In another case there was a double fracture of the radius and ulna with over-riding and vicious union. The bones were chiseled apart and Grant's fixation method employed with excellent results.

I have also used the open method with Grant's fixation apparatus in two cases of primary fracture of the neck of the humerus, both in young boys. The patients were brought here from the country after having been treated some time for "dislocation." One of the boys had been kept under general anesthesia two and a half hours and repeated efforts made to reduce the supposed dislocation, and the tissues had been so traumatized that he was kept in the hospital for ten days before we attempted to do anything. The open operation was then performed, the fracture reduced, and Grant's fixation apparatus applied with perfect recovery. The other boy had a similar fracture with impaction of the lower fragment. This case was also successfully treated by the open method. The first patient was treated in February, 1918, and the result was perfect; the second boy was seen two weeks ago and the Grant apparatus has not yet been removed. The X-ray shows perfect apposition.

Leo Bloch: I am aware of no surgical procedure during the performance of which faulty technique causes more trouble than in the open operation for fracture. The least error in technique in the open operation means amputation in the majority of instances.

A. R. Bizot: Dr. Solomon spoke of dyscrasia

in connection with failure of fractured bones to unite. Several years ago I was unfortunate enough to have under observation a patient with fracture of both bones of the forearm, and I flatter myself that no one could have secured better apposition than was obtained in that case; but at the end of four weeks there was no union nor even formation of callus. The dressing was left on for eleven weeks, when there was apparently some callus and it was thought union had occurred. The plaster dressing was removed and it was found fibrous union of the radius had occurred but no union of the ulna. Dr. Ap Morgan Vance saw the patient with me in consultation, and he was under the impression the bones had united. I called his attention to the X-ray picture, but he did not have much faith in the X-ray at that time.

The patient then fell into the hands of another surgeon who was kind enough to invite me to be present at each operation he performed upon the individual. He first tried to get union by rubbing the ends of the bone together; he next applied Lane plates; the bones were then wired together; later he resorted to the inlay operation; but there was absolutely no union and amputation had to be finally performed.

Dr. Bloch sounded the keynote when he said the technique of the open operation must be perfect to secure good results. When metallic devices are used to hold the bones together, unless the technique is perfect infection and future trouble may be expected. I recall one case where Dr. W. C. Dugan nailed the fractured bones together; the nail is still in the patient's arm and the result being perfect. I have seen several successful open operations, and also some that were not successful.

Some time ago a man sustained a fracture of the femur while in a debilitated condition following an attack of pneumonia. I believe if we had performed open operation on that man we would have destroyed his life. We let him alone for three weeks, then applied Buck's extension. He has about two and a half inches shortening but function is perfect.

In another case a little girl had a fracture of the femur, and everybody who saw her thought there was considerable over-riding of the fragments. The fracture was properly reduced, Buck's extension applied, there was satisfactory union, and the child has a perfect limb.

It is sometimes a difficult proposition to decide just what should be done in cases of fracture, and of course much depends upon the skill of the surgeon. I think we should hesitate about recommending the open operation for general application, and we should always make a guarded prognosis when open operation is undertaken.

W. B. Owen, (closing): The point of final importance in all cases of fracture is the production of useful function. In complicated cases if we have to sacrifice some anatomic alignment and even get some deformity, if function can be secured we should be satisfied with the result.

I think Dr. Bizot did right in the case of fracture of the femur which he mentioned, i.e., allow the bone to unite even if apposition was imperfect, otherwise amputation might have been required and the patient might have died owing to his debilitated condition. Useful function was secured which is the most important item.

Dr. Solomon mentioned syphilis in connection with the healing of fractured bones. This is a most important feature, and in all cases where fractured bones properly reduced and maintained in position do not heal the question of syphilis must be considered and a Wassermann test made. If the diagnosis is verified the necessary treatment should be immediately instituted.

My principal reasons for reporting these cases were: (a) they represented fractures of similar character treated by various types of operative procedure; (b) I desired to emphasize the importance of eliminating so far as possible the use of non-absorbable material for holding the bony fragments in apposition.

Not many years ago certain prominent surgeons were using silver wire and other metallic substances almost exclusively to hold fractured bones in position, but the pendulum is now swinging in the opposite direction and absorbable material is being more extensively used. I maintain that where you have outside control of internal conditions non-absorbable material should not be left within the tissues.

A SERIES OF OBSTETRICAL CASES.*

By Edward Speidel, Louisville.

Single or frank breech presentations, with both legs extended along the front of the child, offer difficulties in delivery at all times. The text book method of treating these cases is manual dilatation under anesthesia, inserting the hand up to the fundus of the uterus, grasping a foot, bringing it down and out of the vagina and then delivering as in an ordinary breech presentation. Under ideal circumstances with a thin abdomen it should be possible to diagnose the condition at the beginning of labor by palpating the extended legs through the uterine tissues. Rarely is one so fortunate as to do so. Single breech should be suspected if a breech is very slow to engage and to descend into the pelvis in spite of good labor pains and the diagnosis should be made positively, if a breech has descended to the floor of the pelvis and then makes no advance in spite of good pains. The extended legs along the front of the body of the child at this stage, act as a splint and effectively prevent the lateral flexion of the

*Read before the Jefferson County Medical Society.

body which is such an important factor in the delivery of the breech.

The following cases present some unusual expedients adopted in the delivery of such cases. A detailed history of the cases is omitted as only the features of the delivery are of interest.

A colored primipara was in labor all night at the city hospital with the breech at the vulva since 3 A. M. I saw the patient at 8 A. M., diagnosed single breech under anesthesia but was unable to reach the leg. With complete relaxation under anesthesia, the breech was slowly pushed up toward the superior strait, with the full hand inserted into the vagina, then was able to reach a thigh, bend the leg sideways, grasp the knee, then the foot, bring it out of the vagina and a living baby was delivered in short order.

The next case, a white primipara, seen in consultation. The patient had been in labor ten hours with the breech at the outlet for three hours. Diagnosed as single breech. The patient was anesthetized and the perineum dilated but the legs could not be reached, neither could the breech be pushed up without undue force, endangering a rupture of the uterus. Half an ampule of pituitrin was injected, the anesthesia was discontinued for a time and when good pains developed the attending physician was instucted to press well down on the fundus. The breech soon began to emerge from the vagina, a leg was released and delivery of a living child resulted.

The writer considers pituitrin absolutely contraindicated in breech presentations, but in this instance could think of no other way to effect delivery and the fact that success attended his efforts with a living child should justify the procedure.

Third case. A primipara had been in labor all night but did not call her physician until 7 A. M. The bag of waters had ruptured during the night and when called to see the case the doctor stated that he thought he could feel a hand high up in the vagina. The patient was seen in consultation at 11 A. M. Upon abdominal palpation, the uterus was found to be firmly contracted down upon the child; nothing definite could be mapped out in the lower segment of the uterus. I thought that I could feel a harder body like the head at the fundus, but was not sure, especially as the fetal heart sounds were easily heard at the left and below the umbilicus. Upon vaginal examination a hand could be felt protruding from the cervix, which was firmly contracted around it. The mother was very desirous of a living child, the patient was a primipara with a narrow vagina, the bag of waters had been ruptured at least ten hours, the position and presentation of the child were undetermined, consequently version was considered too dangerous for both mother and child and a Cesarean section offered as the proper mode of delivery. The patient was removed to the infirmary. Under anesthesia the vagina was thoroughly scrubbed with green soap and sterile water, to limit any infection from the prolapsed hand and the vaginal examinations that had been made. Cesarean section by the Davis method with a four inch incision, entirely above the umbilicus was then performed. Upon cutting through the uterus the head with one arm at the side and the hand on top of the head was found at the fundus, the breech with the other hand in the vagina, in the lower segment of the uterus. A leg was seized and the child turned and brought out of the uterus, asphyxiated but readily resuscitated. The operation was finished in the usual manner and the mother made an uneventful recovery.

It is the writer's opinion that this case was originally a transverse presentation, that the hand prolapsed when the waters ruptured and under the severe pains that followed, the transverse was forced into a longitudinal presentation. If originally an attempt had been made with manual dilatation to bring down a leg and deliver as a breech there would have been a great deal of difficulty and delay in trying to bring down the arm on top of the head and the baby would probably have been lost.

The last case, a colored woman, weighing about 300 pounds was brought to the hospital with the head of the baby out of the vulva. The attending physician had delivered with forceps, after an all night labor and then found it impossible, to bring out the rest of the child. Under surgical anesthesia, the head was firmly grasped and traction downward made, without success. A noose made of three inch sterile bandages was then slipped over the child's neck. One of the internes was instructed to pull downwards and backwards on this sling in the axis of the superior strait, the operator guiding and pulling upon the head at the same time. As the anterior shoulder finally slipped under the symphisis pubis, traction was directed forward and upwards and the baby was finally pulled out of the vagina. A slight tear of the perineum was sutured and the patient had no further trouble.

This series of cases illustrates the unusual methods that at times must be adopted to deliver abnormal cases.

ELECTRICAL ACCIDENTS.*

By J. H. Hendren, Cary.

The number of accidents, both fatal and non-fatal, due to electricity, has of late years increased by leaps and bounds, in every civilized country of the globe. This state of affairs will continue to exist, as long as electric currents are used in the arts and sciences. With the ever increasing area over which it is used, and the constantly increasing uses to which it is put, it is impossible to so harness this force, so powerful, so silent, so deadly, so quick, so invisible, and so little understood in its action, that it will be harmless at all times and under all conditions.

Strange as it may seem, there is very little literature on this important subject. In recent years a great deal of experimental work has been done on the lower animals, and many facts have been observed in cases of accidents to men which has increased our knowledge to some extent. Nor has the careful and painstaking autopsies of electrocuted criminals been barren of results.

It may be true that electrical currents of small voltage and amperage, therapeutically used under the very best of conditions, have in some instances, produced undesirable results. On the other hand, the lightning's flash, has from the beginning of time, carried death and destruction in its wake. It is not the purpose of this paper, however, to deal with these two extremes, but to limit its scope to the discussion of the action of the industrial currents on the human mechanism.

Industrial electricity, is not and can never be a medical question. Neither is it a legal question. Yet I know of no cases in which the general practitioner is more often called upon to testify: and of which, generally speaking, he knows so little, as in cases of electrical accidents. Furthermore, I know of no cases where the testimony of the unbiased medical witness offers such wide variations. Until we get at the bottom of the matter, we must expect the "ambulance chaser" to fatten, and injustice to be done.

Electrical accidents occur most frequently to linemen, dynamo tenders, and others, working around the current proper; but overhead wires carrying high tension currents, often break causing danger to pedestrians; or become entangled with telephone or other low tension wires, endangering scores of lives.

Not only is the physician called upon to treat these cases, but as an aftermath, he becomes also a witness in the damage suit which is almost sure to follow. It is important then that the physician become posted in the fundamental principles of electricity, at least in so far as it relates to the effects of the industrial current on the human body.

A few years ago electrical currents were things unknown to the mountains of Southeastern Kentucky. To-day a meshwork of wires covers this section like a spider's thread, and each succeeding day sees new lines added, both above and below the ground.

Electricity exists under two conditions: the kind that stands still, and the kind that moves: or static electricity, and electrical currents. Mechanically speaking, there are two kinds of electrical currents, the direct and the alternating.

A current of electricity has three factors: namely, force, quantity and friction; or in electrical parlance, voltage, amperage, and resistance. It is just as impossible for a current of electricity to exist without these three foctors, as it is for a material thing to exist without the three dimensions: length, breadth and thickness. Any factor may be immeasurably large, and the others immeasurably small, but the three factors are there just the same. Comparing electricity to a steam engine, we may say that the voltage is the pressure of the steam in the boiler; the amperage is the amount of steam passing through the pipe leading to the engine; and the resistance is the throttle valve of the engine.

We easily know that the greater the pressure in the boiler, the more steam passes through the pipe, the less the pressure the less the steam. We can also readily see, the more of the throttle projecting into the steam pipe, the less the steam; and vice sersa, the less of the valve, the more of the steam. Therefore, we say that the quantity of steam passing through a pipe, varies directly as pressure, and inversely as the throttle valve.

The fundamental law of all currents is: "The quantity is directly proportional to the force and inversely proportional to the resistance" or, electrically speaking, the amperes is equal to the voltage divided by the resistance. This law, known as "Ohms Law", is as unalterable and unchangeable as the law of gravitation.

How much electricity does it take to kill a man?

At the present time this is a much mooted and still unanswerable question. So many things must be taken into consideration, that it becomes very near a personal question in each individual case. One case is on record where 65 volts killed a man; others 110 volts: while on the other hand 23,000 volts has passed through a man's body, and yet he lived.

*Read before the Bell County Medical Society.

Undoubtedly the most important factor to be considered is the voltage. So far as known there seems to be no safe maximum, and no safe minimum to human endurance. Volt for volt, it is generally conceded that up to 300 alternations per second, the alternating current is from three or four times as dangerous as the direct. Above 300 alternations, the two currents seem to be equally dangerous. When the voltage reaches into the tens and hundreds of thousands, as in the Tesla and High frequency currents, and static machines, the danger to human life is reduced to a minimum. Just where the change from the low frequency dangerous to the high frequency non-dangerous takes place, is not known.

Electrical engineers consider 500 volts direct current, and 300 volts alternating current safe to human life. The statutes of Kentucky fix a limit of 300 volts for naked wires on the inside of mines; but many mines in operation before the law was passed still use more than 300 volts on their naked trollies.

The next factor to be considered is the amperage. Under ordinary conditions a normal person can take as much as one-tenth (1-10) of an ampere (100 milli-amperes) without bad effect. There are cases on record where a person has taken as much as five or six amperes (5000 to 6000 milli-amperes) without bad effects. As much as one and one-half amperes, (1500 milli-amperes) are used in the treatment of cancer. Kennedy has shown that for voltages under 100 passing the current from hand to hand, as much as 800 milli-amperes (8-10) of an ampere can be borne without bad results. In legal electrocutions the ammeter shows that from five to ten amperes of current passes through the body of the criminal.

The third side of this wonderful triangle is "Resistance."

Resistance is that peculiar, though not understood property of all substances which tends to interfere with or resist the passage of an electrical current through that substance. It varies with each individual substance and under different conditions of the same substance. Those substances which offer the weakest interference will naturally pass the most current; while those which offer the strongest interference will naturally pass the least current. Pure silver offers the least resistance of all known substances, therefore it is the best conductor. Glass and rubber offer the greatest resistance, therefore they are among the worst conductors.

In cases of electrical death, it is questionable whether the voltage or the amperage plays a greater role. It is possible for either one or both to be the dreaded factor, according to conditions not yet understood.

Let me offer a homely illustration. If I throw a leaden bullet against a man with all my force, very little damage will result. In this case the weight of the bullet, (amperage) is small, therefore (voltage) is small, and the resistance of the human body so great, that little damage is done. But if I load the same bullet in a pistol and shoot the man, the damage will be great. In this case the weight (amperage) is the same, but the force (voltage) is greatly increased, and the resistance is broken down. On the other hand, if I hit the man with a brick, the damage will be great. In this case the force (voltage) was small, but the weight, (amperage) was great, and the resistance is broken down. In the first case it might be truthfully said that the voltage of force killed the man, while in the second case the weight or amperage killed him. In all these cases the resistance was the same.

A number of personal factors must enter into every individual case. The condition of the skin, whether wet, damp or dry; the points of contact, or rather the points of entrance and exit of the current from the body; the duration of contact; and strange as it may seem, sex, vocation and habits. We must remember that the parts exposed to the atmosphere offer a greater resistance than covered parts of the body; and that the epidermis offers a much greater resistance than do other parts of the body. A dry, hard, thick skin offers more resistance than one that is moist, soft or thin. An acid or alkaline perspiration lowers the resistance, while an oily skin raises the resisting power. As compared with any metal, the human body is a very poor conductor, it being calculated that muscles offer 115 million times the resistance of copper. Of all the body tissues, blood is the best conductor, and the epidermis the worst. So we say in a general way that the resistance of a man's body is the resistance of the epidermis. The resistance of dry human skin is high, 50,000 ohms or more. The resistance of ordinary damp skin is much less 3,000 to 5,000 ohms, and under some conditions it may be even less. The resistance of the epidermis may be as high as 100,000 ohms, but after a brief application of the current, it falls to a point known as the "constant minimum" beyond which it will not decrease, no matter how much longer the current flows.

We must not lose sight of the fact that the voltage of any given generator is practically a constant quantity; while the amperage and resistance vary from minimum to maximum sometimes many hundred times a day. The voltage of a line is never what it is at the

power house. Roughly speaking it drops one volt for every hundred feet of copper wire resistance. Back to the steam pipe and the throttle: the larger the throttle opening the more steam; the smaller the opening the less steam; the pressure remains the same. The amount of steam would be the amperage, the throttle valve the resistance. The drop in voltage corresponds in a way to the condensation of the steam in the pipe-line.

It is a well-established fact that new men around electrical machinery are more susceptible to shocks than old workers. Many workmen have told me that they become "saturated" with the current. I have seen men repeatedly stand on the return rail with wet feet and grasp a 250 volt trolly with impunity. Many workers around currents take a daily "shock" for rheumatism and claim much benefit therefrom.

It is claimed by some writers that alcoholic habitues are more susceptible to the electric current than total abstainers. This in my opinion, would be about as hard to prove as it would be to disprove. It is also claimed by some writers that women are more susceptible than men. When we consider the more delicate skin, the nervous system, the natural timidity, and the less frequency of women about electrical currents there might be some reason for the statement.

It has long been known that currents passing longitudinally through the body, are more dangerous than currents passing transversely through the body. It has been shown repeatedly, in cases of men or stock near a tree struck by lightning, that those with their heads to the tree trunk, were generally killed, while those with their heads away from the tree are less often injured.

Resistance does two things: it reduces amperage, and it produces heat. Other things being equal, danger to life is by the length of contact. As the current burns through the epidermis it comes in contact with the alkaline juices of the body, which greatly reduce the resistance, and increase the current flow.

Does electricity really cause death?

As late as 1912 Jellinek said: "From my experiments I have concluded that death by electricity is really in the first place, nothing but suspended animation: which is later changed to real death." Dr. Copeland agrees with this view by saying: "An electric shock from any voltage whatever is simply a case of suspended animation due to lack of circulation." Seventy-five per cent of all cases of electric death could be saved by prompt methods of resuscitation. Some years ago an eastern scientist gained considerable notoriety by maintaining that electrocuted criminals, died not from the current, but from the post-mortem knife; and that he could resuscitate any victim of the electric chair, regardless of voltage or time, if given the proper trial.

The majority of writers do not agree with this theory. While it is undoubtedly true that many lives are lost which might have been saved by prompt resuscitory measures; it is beyond the pale of doubt that life is often too completely snuffed out to ever be restored.

Electricity produces death in two ways: directly and indirectly. Of the direct method the first is:

Shock. A person might be so shocked by the sudden application of the current, as to cause a temporary suspension of heart beat or respiration, even there be no lesion from the current. This is probably a very rare occurrence, if indeed it occurs at all. It is undoubtedly true that sudden shock could have something to do with electrical death. By placing a man on an insulated stool and gradually increasing the voltage, as much as 10,000 volts has been passed through the man's body. However, the voltage must be as gradually reduced as it was built up, and all possible danger of a ground removed, else "something will be doing."

Second, Primary Heart Failure. This is undoubtedly the most common cause of electrical death. Fibrillation of the ventricles is the cause of this failure, when once it occurs it is impossible to remedy. The sudden, forcible electrical contraction of the muscular walls on a full ventricle, might rupture the walls of the heart, or rupture the valves.

Fibrillation is the electrical contraction of the ultimate fibrils of the muscle. Fibrillary contractions are produced in dogs by electrical shocks with currents as low as ten volts. Currents of 100 volts produce muscular contractions at make and break. Higher currents produce irregular muscular spasms, while still higher voltages, 500 or more, produce anesthesia without spasms, but with respiratory failure.

All currents produce their greatest effect when one electrode is in the mouth and the other in the rectum. This reduces the resistance to a minimum, and places the heart directly in the circuit, by which cardiac fibrillation is more certain to be produced.

It has been shown from the experiments of d'Arsonval that currents of very high voltage cause death instantly, either by and through the disruptive action of the current, or by the sudden heat production which causes tissue alteration and disintegration. A current of lower voltage caused death by asphyxiation, due to paralysis of the respiratory center in the medulla. If the current be

passed, even for a long time, through the brain and upper cord, only, it is possible to revive the patient by means of artificial respiration. If, however, the heart is in the circuit fibrillation takes place, and artificial respiration seems useless.

Third, Respiratory Failure. This is due to a paralysis of the respiratory centers, or the nerves leading therefrom, and was alluded to in the preceding paragraph. One observer has said: "When the voltage is in the hundreds, look out for heart paralysis; when it is in the thousands, look out for respiratory paralysis." Cunningham infers from his experiments, that when the head, heart and whole body are in the circuit, we will have:

First, heart paralysis, due to fibrillation of heart muscle.

Second, inhibition of respiration, due to action of the respiratory centers.

Third, anemia of the brain, producing syncope.

Fourth, death.

Indirect Causes of Death. First, the sudden action of a very simple shock, in itself harmless, might cause a person to fall from a ladder, scaffold, pole, or other high place, causing death from injuries totally foreign to the current.

Second, death in a few days or more, due to gangrene, suppuration, inflammations, exhaustion, and shock following operations, due primarily to electrical accidents.

Third, paralysis. Different neurotic lesions sometimes follow electrical accidents, especially spinal paralysis.

Post-Mortem Findings. In a word, the post-mortem evidences as to the real cause of death by electricity, are generally negative. No pathological changes are regularly found in the heart muscle, and no changes of importance in the central nervous system, except where large quantities of current have passed through the body for a long time. The abnormal fluidity of the blood resembling asphyxia, seems fairly constant. Cadaveric lividity occurs extra early as a rule.

It is unscientific to draw conclusions from the post-mortem findings of electrocuted criminals, as compared to persons who come in contact with a live wire.

Treatment. The treatment of all cases of apparent death by electricity may be summed up in the Master's words: "Whatsoever thou doest, do quickly." Unfortunately by the time the physician arrives on the spot, the time for action has long since passed, and the victim dead through ignorance of the bystanders. In only one class of these cases can we hope for any result by treatment, and that is in the cases of respiratory paralysis. By superficial examination, we cannot tell whether a man has respiratory paralysis or cardiac paralysis, so we should practice artificial respiration on all cases. The critical time is the first few moments after the accident, before anaemia of the brain sets in. Artificial respiration should be begun at once and continued until normal breathing returns or until evidences of death are plain. There is a standing rule in nearly all power houses in the larger cities, to practice artificial respiration until the doctor arrives. One case is of record where a man was brought out of the "valley and the shadow" by four hours of artificial respiration. But this seems to be an exceptional case. Mine operators who use electricity should instruct their employees in this particular treatment, and impress the use and need of it in these particular cases. The "First Aid" movement in this section has done much to enlighten the miner to the necessity of immediate action. Carefully printed instructions should be posted in conspicuous places inside and outside of the mines.

The pulmotor is the ideal treatment in these cases, but must be used early. Any person who has tried to keep up artificial respiration for a long time, will gladly welcome a mechanical contrivance to take his place. The pulmotor is a repulsive looking gentleman, and I never see one in action without sincerely hoping that it will never fall to my lot to be the victim. But it will unquestionably do the work.

Some writers lay great stress on the rhythmical contraction of the tongue during artificial respiration, while others do not even mention it. Beyond the fact that the tongue should not be allowed to fall back and cover up the windpipe, I see no urgent need for this particular proceedure. There is no movement of the tongue in normal respiration.

The use of many drugs and various procedures have been advocated by different writers. Strychnine, adrenalin, normal saline, bleeding, lumbar puncture, cardiac massage, nitro-glycerine, counter currents of electricity, and perhaps many others have been tried, but in most all cases they fail to come up to the claims of their promoters. So, after all, it seems that early and efficient artificial respiration is the one sheet anchor in these trying moments.

There is another side of this subject which so far I have not touched upon. That is the non-fatal cases of electrical accidents, and the sequellae thereof. This subject of itself would comprise a paper of equal or greater length than the one I have read, and this one is already too long. I hope at some future day I may have the pleasure of presenting this side of the question to you. One parting

admonition I am inclined to make, and that is this: electrical burns are very deceiving in character, heal rapidly and kindly, and as a rule leave less scar tissue and offer better prognosis than burns of an equal degree from other sources. One advice given by most surgeons in these cases is "Never amputate unless you are forced to do so," for even the most desperate cases will often terminate favorably.

JOINT LESIONS FOLLOWING FOCAL INFECTIONS IN CHILDREN.*

By John D. Trawick, Louisville.

Joint affections undoubtedly occur as the result of focal infections, likewise bone diseases may follow upon a remotely situated area of infection, and their simultaneous or subsequent appearance is not due by any means to mere chance, or coincidence.

For many years we have been seeing articles on oral sepsis and its relationship to systemic disease, and have believed the teachings of those who have charged to the tonsils many and various bodily ailments. But it is possible that we are guilty of more or less blind acceptance of these preachments without a clearly conceived reason for the faith we profess. The dogmatic statement that such and such is the case does not establish a scientific basis for proof. When, however, we find by close study that certain strains of streptococci possess an affinity for certain tissues, as for example, streptococcus viridans for joints, tendons, muscles and for the endocardium, pericardium, etc., and further that when the virulence of the streptococcus is raised by methods which Rosenow has demonstrated (commutation of bacteria) this strain may produce cholecystitis, pancreatitis, gastritis and duodenal ulcer,—then we begin to wake up and grow intensely interested in the haunts of the streptococcus viridans, in the manner and method of his entrance into the system, the routes he pursues, and the relationship with the evidences of his former or remote activity bears to the lesion immediately under investigation.

Polyarthritis in children and young adolescents may undoubtedly result for instance from infected tonsils, or maybe from a septic mouth, or nasopharynx, or teeth or gums, but is the infection carried along through the channels of the blood, or by chance through the tortuous route of the glandular system, until it, (whatever "it" is), reaches, for instance, a knee joint, there to be deposited, or put off the train, so to speak—and immediately by some mysterious instinct to begin its renewed activities in the new and distant field? It is very difficult to visualize microorganisms endowed with a mythical intelligence, being sent out on a mission of infective mischief, going on their way until their destination is reached, whence they begin activities and a new system is added to the complex. Polyarthritis is secondary, no doubt, to septic tonsils maybe, or to sepsis in some other focus, but more is necessary to produce the pain and disease in the joint, than the mere conveyance from the septic focus to the joints of the specific particular microorganism.

Why are we so frequently disappointed that our arthritis for instance, does not clear up after every septic focus discoverable, has been eradicated? If the mere presence of the microorganism simultaneously in the abscess cavity and in the joint remotely distant, constitutes the modus operandi of the arthritis from which the patient is suffering why are we so frequently surprised to find that the evacuation of the abscess cavity fails to effect the arthritis? Any fool can ask questions, but it takes a scientist to "project inquiries." Undoubtedly a newer and larger conception of joint lesions has been possible since we have been projecting our inquiries along these very lines. No longer can we be satisfied to fix an inflamed joint and hold it prisoner until it decides to quit its cutting up, and subsides into quiescent acceptance of our command to cease inflaming. The joint itself may be, has been but a mere innocent party to an enormous constitutional conspiracy widespread and rampant. Get away from the idea that an arthritis in a child is an integral thing—something to itself, having nothing to do with the rest of the child's body. Much wiser would it be for some shrewd scientist to be telling us more about the blood of that child; for the kidneys to be closely searched, for the entire premises to be gone over, so to speak, in our hunt for the various possibilities of toxemia. The arthritis is but a result. It has not sprung of itself without fostering influences. Since it is the offspring of pernicious parentage, it must have other kin, and the reason our arthritis has not improved perhaps is because we have not given attention to all the related influences existing, but overlooked.

The suggestion of autogenous vaccine arises in your minds. In this connection here come reports of cases of subacute and chronic types of arthritis being treated by intravenous injections of foreign protein in typhoid vaccine. "It seems to be fairly well established that typhoid vaccine in arthritis does not relieve symptoms by forming antibodies, that it is not a specific therapeutic agent, but

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that the benefit is derived from the protein carried in the dead bodies of the bacteria which were thought to produce a rise of temperature and hyperleukocytosis just as other proteins like milk, proteose, horse serum, chicken serum, and sodium nucleinate are thought to do." (Thomas.) This is giving us more light upon our ideas of the complexity of the relationship between the focus of infection and the arthritis we are concerned about.

The tonsils, teeth, gums, sinuses, ears, eyes, urethra, heart, gastro-intestinal tract, gall-bladder, all are kept in mind in searching for the sites of infection in children, and even the infective skin diseases like scabies, impetigo, may leave suppurating foci.

Since it is more than likely that the child will have one or more of these conditions present we cannot hope to make much impression upon an arthritis, until we have not only found and dried up the most evident focus, but prepared the constitution for as deliberate resistance as can possibly be done. In a few cases there will be no demonstrable focus, but an obscure gland hidden away in its infective secrecy may nevertheless be the unlocated cause even of those so-called "clean" cases.

Even after the foci have been dealt with or have disappeared or we have failed to locate any demonstrable cause, nevertheless it is not possible that the train of changes set in motion by the etiologic infectivity keeps on automatically, until finally that spot where there is the least resistance becomes the sector wherein is laid down the enemy barrage, and we know the battle is raging hotly in a joint, but can surmise that the lines of communication may lead back ultimately to the location whence our train started. The biologic interpretation of these complex facts herein rather fantastically expressed, is one of the most interesting tasks before us. We find ourselves too small for the job. The specific effect of a single strain of microorganisms upon the blood may be clearly understood, but the non-specific factors in the treatment of disease, that is those factors outside the range of expected influence of the specific organism, are just as important perhaps and as essential in both the causative as well as the therapeutic consideration. In speaking of the non specific factors in the treatment of disease, Jobbling and Peterson have been quoted, in referring to the effect of the injections of proteins into the blood stream in the treatment of arthritis to prove that the biologic reactions resulting are based upon, or due to what they call "colloidal dispersion," in that the injections bring about a less desperate state, affecting not only the serum proteins, but also the serum lipoids." Such alterations are sufficient, they claim, to bring about fluctuations in the coagulation mechanism as well as in the opsonic and complement powers of the serum. "But here, as in so many other biologic problems which have to do with that most complex of tissues, the blood, it seems probable that no single factor can be identified as responsible for all the changes which occur but that a whole train of events is inaugurated when the equilibrium of some of the delicate serum balances is disturbed, all of which tend toward a condition favorable for recovery from infection."

We might quote a few cases from the rather scant literature on this particular subject but this literature is available to all of us. I should like to call particular attention, however, to some reports of cases by William Jackson Merrill, Philadelphia Academy of Surgery, November, 1916. Also to a report of Eisendrath's in Chicago Medical Society, November, 1916, of a case of "Acute Osteomyelitis of the Spine." This latter while of larger interest on account of the bone condition, is in point for this discussion on account of the relationship the condition has to an infection of the right index finger requiring operation one month before.

One of our cases, a young married woman, multipara, presented a polyarthritis, acute, involving both ankles, both knees one after the other, and a wrist. The reactions were depressing. Pus, bacteria and albumen in the urine. Temperature not over 100 at any time. The tonsils had been clipped several years ago, in New York. The stumps were now actively infected. As soon as subsidence occurred to a degree to justify their removal, Dr. Pfingst did a complete and clean enucleation.

An autogenous vaccine was prepared and after the first injection the improvement which had already been noted the very afternoon after the tonsils were removed, became rapid and complete. The period of rest and fixation to the joints was much shortened and the patient came in a few days ago having gained twelve pounds in less than two months.

A much more difficult case, and one which presented a less favorable outcome was referred by Dr. Barbour, to whose kindly cooperation I am indebted for a very interesting study.

Baby Blank, age about 16 months, came for pain in right shoulder and right elbow joints. Radiogram showed a rarefying process in the upper portion of the humerus just below the head not sufficiently clearly defined to warrant diagnosis of Osteomyelitis. The elbow joint showed no bony changes but an arthritis, the epiphyses were normal. On account of the pain in the shoulder and elbow a light plaster splint was applied to the arm and shoulder holding the arm in abduction and the elbow

flexed. The child improved remarkably under the tonic treatment pursued by Dr. Barbour combined with the joint rest. For a period of some two months there seemed to be favorable progress. In spite of careful attention of Dr. Koch, with whom I was personally associated in the absence of Dr. Barbour, the child failed rapidly and died presenting finally typical symptoms of tuberculous meningitis.

The focus of infection in this case was probably the naso-pharynx by a series of "boils" on the body. Unfortunately the more careful laboratory aids could not be used on account of family opposition. We had to be content with our interest in the case and the pleasure we had in the careful study.

AN INTERESTING CASE OF CHOLECYSTITIS.*

By A. W. Nickell, Louisville.

The gentleman I have the pleasure of exhibiting to you this evening is Mr. C., aged forty years, who was referred to me about a month ago by Dr. McClure, of Cox's Creek, Kentucky.

There is nothing of particular interest in the patient's family history. He had the ordinary diseases of childhood, and about a year ago suffered a severe attack of pneumonia. However, he states that he has not been feeling well for the last eight or ten years, and since October, 1917, he has been in unusually poor health. He has had marked orthopnea and has been unable to rest in bed except in a sitting or upright posture. His weight gradually declined until he finally reached the point where he could not get about because of extreme weakness.

Upon arrival in Louisville the patient was given a thorough examination: Urinalysis showed a low specific gravity, some indican and bile, a few hyaline and granular casts, and about two-plus per cent sero-albumin. A small amount of mucus was present in the urine. No acetone or diacetic acid. Blood examination: hemoglobin about seventy per cent; a high leucocyte count, red blood cells 4,000,000; white blood cells 13,000. Differential count of the white cells showed a polymorphonuclear percentage of about sixty; lymphocytes thirty-three per cent; transitionals and eosinophiles practically normal; and no platelets. There were many large mononuclear cells. No parasites in the blood. His systolic blood pressure was 110 mm. hg., diastolic 75 mm.

The test meal showed five to six hours retention; free Hel. and total acidity practically normal. Examination revealed no pathology about the naso-pharynx or mouth; ears, nose and throat and thyroid gland normal.

Fluoroscopic examination of the chest showed the bronchial glands rather darker than normal, indicating probable infection. The heart extended slightly further to the left than normal and there was a marked degree of mitral insufficiency; indeed the cardiac manifestations seemed to overshadow other symptoms.

When the abdominal area was examined considerable distension was noted, the gall-bladder seemed to be enlarged and tense, the patient complained of intense pain in that region on palpation, and diagnosis of acute cholecystitis was accordingly made. The patient was placed in bed and under the usual eliminative and supportive treatment soon began to improve: the dyspnea subsided, the gall bladder pathology seemed to disappear, and finally he could lie prone in bed. There still remains some evidence of myocardial irritation, but the cholemia has disappeared, elimination is good, he is eating everything he wants, and says he feels well. He can go up and down stairs and walk without discomfort. His blood pressure is about normal. He was confined to his bed for nearly eleven months before coming to Louisville.

This case suggests two or three interesting points. It must be recognized that in the medical treatment of any disease we must first ascertain the underlying cause, and the time to treat cholecystitis is before the formation of gall stones, and that there is a distinct medical side to these cases. Those of you who take the *New York Medical Journal* probably noticed a most excellent resume of this entire subject in a recent issue by Samuel Weiss. Dr. David Reisman, of Philadelphia, has also called attention to the distinct relationship between cardiac symptoms and gall bladder disease. In a paper which I read before the State Medical Association last year I called attention to this relationship, and a number of the gentlemen who were present agreed with me.

We must remember that the focus of infection may be located in the appendix or gall bladder, as well as in the naso-pharynx, the tousils or the teeth; the synovial membranes may be affected, and endocarditis, arthritis, nephritis, etc., may occur. The heart manifestations oftentimes overshadow other symptoms, and when the causative pathology is eliminated the other symptoms subside.

This patient had mitral insufficiency (first or papillary stage) which is now difficult to elicit; only a slight murmur being heard after exercise. We must remember that the focus of infection may be in the gall bladder, and this case beautifully demonstrates that fact.

*Clinical report with exhibition of patient before the Jefferson County Medical Society, October 7, 1918.

Answering the question someone has asked as to the percentage in which there is recurrence of the symptoms in cases of this kind: I believe Smithies gives the percentage of recurrences after medical treatment of cholecystitis as 21.9 per cent., not much much more than the recurrence of symptoms after surgically opening and draining the gall bladder.

DISCUSSION:

John R. Wathen: Dr. Nickell has certainly secured a beautiful clinical result in the case reported. However, I am not very hopeful about the permanency of the medical cure of cholecystitis. We know that a violent attack of gall-bladder disease may occur followed by quiescence for a long period of time. The patient apparently remains well for a long while, then finally reaches the surgeon in another attack. When we open the abdomen the viscera are usually found densely adherent, the gall bladder, duodenum, transverse colon, liver and stomach being involved.

I recently saw a man in an acute recurrent attack of cholecystitis. The gall bladder had ruptured some time previously, because some of the calculi were outside of the gall bladder, and others had probably passed into the transverse colon through the fistulous opening.

I never feel sure of my diagnosis of cholecystitis until the gall-bladder had been carefully examined through an abdominal incision. I have even opened the abdomen and found what I thought was a perfectly normal gall bladder, excepting slight distension, and no calculi could be detected. When the gall bladder was opened much to my surprise four or five calculi were found in thick tarry-looking bile, the interior of the gall bladder presenting the typical strawberry appearance described by Moynihan and Mayo. These are the cases in which ante-operative diagnosis is most difficult.

In the case reported, from the standpoint of both the patient and the internist, there has been produced a symptomatic cure, and both the doctor and the patient feel satisfied with the result; but unfortunately the majority of such cures are not permanent, and when the next attack occurs instead of returning to the internist the patient will probably go to the surgeon to have his gall bladder removed. The surgeon thus sees the end results. Possibly this man may remain well, but the internist should always warn the patient that sooner or later these quiescent stages of cholecystitis will be followed by another acute attack.

A. W. Nickell (closing): This patient to all intents and purposes has made a good recovery, and as Dr. Wathen says that is all one can expect from the internist. When adhesions have formed and the gall bladder is filled with calculi, of course surgical intervention is indicated. In gall bladder disease the long standing with calculi there must always be considered the danger of subsequent malignancy.

Many times after the surgeon removes gall stones and separates adhesions, the internist must treat the patient, and recurrence of symptoms after operative intervention is about as frequent as after medical treatment. Success hinges on early diagnosis and the institution of proper medicinal and dietetic treatment, with caution to the patient to take care of himself in after life, to prevent infectious diseases and secure free elimination. I believe where the patient is seen early, before adhesions have formed and where there is no evidence of calculous formation, the outlook is just as favorable under medical as under surgical treatment.

CARCINOMA OF THE PENIS.*

By John R. Wathen, Louisville.

The specimen which I exhibit is a large carcinoma of the penis together with a mass of enlarged lymph glands removed from each groin. My principal reason for presenting the specimen and briefly reporting the case is that carcinoma of the penis is rather uncommon. In my own practice, which extends over a period of twenty years, I can recall having seen only six similar cases. Penile carcinoma is exceedingly rare in the colored race. Several years ago in my clinic at the Kentucky School of Medicine I operated upon an old colored man, removing the penis which contained a large cauliflower growth, and when the case was reported there was so much doubt expressed as to whether or not it was a carcinoma that the specimen was later submitted to a pathologist of Philadelphia, Pennsylvania, who confirmed the pathological diagnosis. In the fourth volume of Keen's surgery that case is quoted as being the third one of carcinoma of the penis reported in the colored race in the United States.

Briefly the history of the case is about as follows: The patient is a physician, Dr. C. M., white, of Indiana, fifty-seven years of age. No previous venereal history, and his other history is negative. He first noticed a small warty growth on his glans penis July 1st, 1917. This remained quiescent and without pain until about one month before he consulted me, when the tumor began to grow with great rapidity and became very painful. There was considerable thin discharge from the surface of the growth, and the glands in both groins were enlarged.

When first seen by me the tumor was about the size of an egg, and the enlarged inguinal glands could be easily palpated. The patient

*Clinical report with exhibition of specimen before the Jefferson County Medical Society, October 7, 1918.

was operated upon at St. Anthony's hospital, Louisville, about two weeks ago.

The pathological report on the specimen, made by Dr. Stuart Graves, was epithelioma of the penis so far as the tumor itself was concerned. The enlarged inguinal glands which were removed en masse showed chronic inflammation and hyperplasia of the tissues, but there was no evidence of metastasis.

The operation was performed according to the technique described by Dr. H. L. Kretschmer, of Chicago, in the April, 1918, number of the Surgical Clinics. The author presents several pages of illustrations which show the various operative steps better than I could describe them. Nearly all of our surgical text books give the details of amputation of the penis, and that is the initial step in the more radical operation which was performed in this case.

After the penis has been amputated to get rid of the tumor, an incision is made completely encircling the penile stump; the scrotum and perineum are then incised and the urethra separated by brunt dissection from the remaining corpora cavernosa on either side; the urethra is dissected free down to the prostate and the corpora cavernosa ligated close to where they branch outward into the perineum, and the penile stump with its ligamentous attachments is then removed. This operation is known as radical removal of the penis. After this has been done the incisions are extended over Poupart's ligament on each side and the infiltrated lymph glands removed en masse, the urethra is brought through the scrotal incision, and the wounds then closed. This leaves practically no evidence of malignancy.

It has been questioned in certain quarters whether such a radical operation is justifiable especially in elderly men. It can well be understood that it is an operation of considerable magnitude. It has been a question in my mind whether the testicles should not be also removed at the same time; but for cosmetic reasons and also for sentiment the patient usually prefers to retain his testicles. We must also remember that the patient is an elderly man, and there is considerable shock attached to the removal of both testicles under such circumstances. Moreover, so long as good results can be obtained by removing the penis and the area of lymphatic infection by the method described, the testicles may as well be left undisturbed. This in no way interferes with the radical cure, so far as the malignancy is concerned, because the glandular involvement does not extend to the testicles. The operation when properly executed according to its modern method yields remarkably brilliant results as regards recurrences, equally as good as operations for carcinoma involving other anatomic situations.

I am aware of no operation which should be more radical than for carcinoma of the penis. It is on a parity with the operation for carcinoma of the lip, and we know in the latter recurrence is almost certain unless a wide section is made. In carcinoma of the penis the inguinal lymph glands are always involved. If this operative work is to be undertaken it should be radical, and this specimen is exhibited to illustrate a procedure which is not mentioned in the majority of our surgical text books.

The patient made an uneventful operative recovery and was dismissed from the hospital at the end of two weeks. I believe the prognosis is favorable and that the cure will be permanent.

DISCUSSION:

A. W. Nickell: While I am not a surgeon, cases of epithelioma involving various parts of the body are not infrequently encountered in general practice. I am glad Dr. Wathen emphasized the necessity for radical operation in every case of this kind. A number of men who are trying to practice surgery seem inclined to do only partial operations in such cases, and as a result the malignant process continues to extend and metastasis soon occur. The patient is then in such condition that radical removal of the malignancy by the most expert surgeon is practically impossible. Radical operation is indicated as the primary step in this class of cases, thus obviating the danger of future metastasis.

C. G. Hoffman: We have had two cases of penile carcinoma in the Louisville Public Hospital during the last two years. I believe one of the predisposing causes in carcinoma of the penis is a hard and unretractable prepuce; at least that has been true in two cases which have come under my observation. In one case seen four years ago the patient had a hard, fibrous, almost cartilaginous prepuce which could not be retracted sufficiently to permit the introduction of a urethroscope. He was a diabetic and could not be operated upon. Carcinoma of the penis developed within eighteen months after the patient was first observed. The literature contains several instances where a tight and unretractable prepuce was a predisposing cause of penile cancer.

W. H. Long: This is the second case of penile carcinoma I have seen in fifteen years, and it is the only one where the patient made an operative recovery. The other patient died within a few days after the operation. Enucleation of the penis with removal of the enlarged glands from both groins constitutes a rather formidable surgical procedure. The fact that these men are old and for other reasons are not good subjects for surgery or anesthesia, the surgeon is to be

congratulated on an operative recovery whatever the ultimate result may be.

When the first case I saw was reported an interesting point discussed was the fact that the man's wife had been operated upon a short time previously for carcinoma of the cervix. There was considerable speculation as to whether or not infection or contagion could be transmitted to the husband by contact in this way. The etiology of carcinoma was about as obscure at that time as it is now, and there was a small school of adherents to the infectious theory.

SARCOMA OF THE OVARY.*

By M. Casper, Louisville.

Sarcoma of the ovary is sufficiently common to merit a brief report of the following case, the second one which has come under the observation of the writer during the last year.

Sarcoma involving the ovary may develop as a primary malignant growth, or degenerate from a fibroma which it grossly resembles, often requiring the microscope to differentiate. Fibromata are usually softer tissue than sarcomata and show areas of necrosis, fatty degeneration and hemolytic infiltration. It is good routine practice to subject all such growths to microscopic examination, especially for reasons of prognosis.

Sarcoma of the ovary is bilateral in about one-fourth of the cases. Ascites is always present, although this is not characteristic of sarcoma as it may exist with other ovarian tumors. The ascitic fluid in sarcoma is usually bloody. Metastasis is early usually first into the retro-peritoneal glands and finally the peritoneum.

CASE REPORT.

Mrs. D., aged forty-one, widow, with negative family history, first seen June 4th, 1918. The patient thinks she has gained some in weight, which is one hundred and forty-seven pounds; she is very anemic with puffiness under the eyes; she menstruates every month, four-day type, less copious the last two months. She has never been pregnant. Her chief complaint is "tightness and discomfort" in the abdomen. Gaseous distension and sense of fullness are especially marked after eating.

Examination shows large evenly distended abdomen—mostly fluid. Vaginal investigation reveals large uterine fibroid and double ovarian tumor with lessened motility.

Celiotomy, June 7th, 1918: Abdomen contained two gallons of fluid mixed with degenerated blood. The uterus contained several fibroids, and a tumor was present in each ovary, the latter being very adherent to all surrounding structures.

A wide hystero-oophorectomy was hastily executed, at the conclusion of which numerous high retro-peritoneal lymphatic glands were discovered,—and they were extensively enlarged.

As regards the fibroid tumors: they seemed to have existed for a long period of time without causing the patient any discomfort, or even reproducing symptoms suggestive of their presence. The fibroid tumors were in no way extraordinary, the only question which naturally arises in this case being how much effect the fibroid had in predisposing to the sarcomata of the ovaries.

In spite of much shock the patient convalesced satisfactorily and left the hospital in three weeks. After being at home a short while she grew rapidly worse, the abdomen soon refilled with fluid to enormous size, and the patient died shortly.

The only comment I desire to add is that this case should have been classed as inoperable from the beginning. However, the lymphatic gland involvement very high in the retro-peritoneal space was not discovered until after completion of the operation.

DISCUSSION:

Stuart Graves: There are three kinds of ovarian tissue from which tumors may originate. The epithelium gives rise to the ordinary cystadenomata, and when these progress beyond the border line they become malignant adenomata or carcinomata. Such tumors are relatively common. The smooth muscle-tissue of the ovary, of which there is not a large amount, gives rise to myomata or leiomyomata. These are not so common as tumors originating in the epithelium. Tumors arising from the connective tissue, which grow slowly and show no mitoses, no infiltration into the surrounding structures, nor even mitotic figures in the tumor tissue itself, are classified as simple fibromata. On the other hand, if they grow with sufficient rapidity to show mitoses in the tumor itself, they are classified as fibrosarcoma. These connective tissue tumors are also comparatively rare. I believe such tumors involving the ovary are more often bilateral than unilateral.

The case reported was one in which the tumors were seen microscopically to consist of connective tissue and, as growth had been sufficiently rapid to show mitotic changes in the tissue of the tumors themselves, the microscopic diagnosis, without reference to the clinical aspects, was fibrosarcoma. I did not know until I heard Dr. Casper's report that metastasis had occurred. Of course that makes the diagnosis complete.

Fibrosarcoma of the ovary are not very common. I have examined hundreds of ovaries during the last few years and have encountered

*Case report with exhibition of specimen before the Jefferson County Medical Society, September 16, 1918.

a large number of ovarian tumors, such as cystadenomata, malignant adenomata, etc., and have seen previously only two connective tissue tumors which I can recall. One removed from a young woman not long ago. Only one ovary was involved and this showed a small external papillary formation. On microscopic examination it was found to be composed of connective or fibroblastic tissue, but the tumor had grown so slowly that the tissue did not show any mitotic figures on careful examination of the sections.

A. R. Bizot: Solid ovarian tumors the size of those exhibited by Dr. Casper, especially where lymphatic gland involvement has already occurred, are almost invariably malignant. Tumors of this class are sometimes overlooked because they are associated with cystic formations. Whenever a hard ovarian tumor reaches the size of those exhibited I believe between ninety-five and one hundred per cent will be found malignant.

M. Casper: Malignancy was suspected in this case as soon as the abdomen was opened, but the enlarged lymphatic glands were not discovered until after conclusion of the operation. Had the extensive lymphatic gland involvement been known, the case would have been considered inoperable from the beginning. Many of the glands were the size of hen's eggs.

As to Dr. Graves' remarks about ovarian fibrosacoma being usually bilateral: My information was secured from Dr. W. P. Graves, of Boston, who says they are bilateral in only about one-fourth of the cases.

This is the second case of the kind I have encountered during the last year, and the other patient went the same way this one did. Metastasis occurs first in the retro-peritoneal lymphatic glands and later the peritoneum, and death usually supervenes.

To me the most remarkable feature in the case reported is the few symptoms the woman manifested or gave in her history. She had no menstrual irregularity or abnormality. Someone had told her that she had an intra-abdominal tumor, and she came to me for operation with practically no other history. Inspection showed an immense abdomen, and two gallons of fluid were removed. The uterine fibroid had evidently existed for a long while, and an interesting question is whether or not this constituted the so-called pre-cancerous condition; that it, whether the uterine fibroid had anything to do with development of the ovarian malignancy. As an irritative lesion it might have had some influence as a predisposing cause.

Stuart Graves: I am glad Dr. Casper mentioned the last point. When we found the ovarian tumors were fibrosarcomata, we naturally gave examination of the uterine fibromyoma more care than we would have done under ordinary circumstances with the view of determining whether or not it was also involved in malignancy. However, no evidence of malignancy was discovered.

I have been particularly interested in the question of multiple heterogenous tumors, that is tumors arising from two entirely different types of body cells such as presented in this case. Some time ago I saw a case report in the Boston Medical and Surgical Journal of multiple heterogenous tumors observed at autopsy; these two tumors were adenocarcinoma of the stomach, and hypernephroma of the kidney. In searching the literature at the time it was found that multiple benign tumors arising from different types of body cells were fairly common, but multiple malignant tumors arising from different types of cells were extremely rare; consequently I have been on the lookout ever since for another case of that kind. Multiple tumors of the same type are not uncommon, for instance bilateral or multiple malignant growths of the lymphatic tissue (lymphosarcomata), but multiple tumors arising from different types of cells,—one of which proves to be malignant and the other benign as in the case reported,—are extremely uncommon.

I do not believe the uterine fibromyoma had any connection either etiologically or clinically,—certainly no connection so far as the origin is concerned,—with the fibrosarcomata of the ovary.

SOME EXPERIENCES IN THE USE OF THE ESOPHAGOSCOPE AND THE BRONCHOSCOPE.*

By Gaylord C. Hall, Louisville.

In reporting these cases I wish to first define the limitations of the work and to point out some simple rules in the handling of these cases before they come into the hands of the endoscopist, because there is probably no class of surgical cases that are as badly "messed up" by well-intentioned but misdirected efforts at relief as in this foreign body work. Besides the extraction of foreign bodies the method is of importance also in diagnosis. In the lungs we may locate abscess cavities and bronchiectasis, new growths and there has been some attempt at therapy by treating asthmatics with local applications through the bronchoscope.

In the esophagus we can locate strictures, diverticula, malignant growths, and spasms.

The extraction of foreign bodies of course constitutes the great bulk of this work.

In all cases where there is a foreign body in the larynx the immediate symptom is that of choking. These cases are usually seen in young children. The child will have a choking spell, get blue in the face, and make spasmodic attempts to breathe. If the foreign

*Delivered before the Jefferson County Medical Society, Louisville, with Exhibition of Specimens, May 20th, 1918.

body remains in the larynx, immediate spasm of the glottis occurs unless tracheotomy is performed. Usually, however, these cases have only partial obstruction. The rule is if the child is persistently cyanotic to perform immediate tracheotomy without attempting to remove the foreign body unless you have the proper instrument with which to do it. Tracheotomy will relieve the spasm of the glottis and the danger of suffocation, and these are the important symptoms to be overcome. When the foreign body has passed into the trachea, we will have cessation of the alarming symptoms. Intermittent spasmodic coughing spells may occur when the foreign body is thrown upward against the under surface of the vocal cords.

After subsidence of the acute symptoms and the foreign body gravitates lower into the bronchus, absence of air sounds over the occluded area is noted. A little later we have beginning bronchial irritation, and a sign Jackson has recently spoken of as "asthmatic wheeze". Listening at the open mouth of the patient during inspiration and expiration, a peculiar wheezing sound is heard with the breathing. After the foreign body has passed below the vocal cords the patient becomes quiet, and no attempt at removal should be made excepting by someone who is capable of doing this work.

When the foreign body lodges in the esophagus there is usually an immediate chocking spell with dysphagia and sometimes the patient finds it impossible to take either food or drink. The favorite sites for lodgment of foreign bodies in the esophagus are. (1) behind the cricoid cartilage, (2) behind the tracheal bifurcation, and (3) at the cardia.

EXHIBITS.

The first specimen is a piece of bone which had lodged behind the cricoid cartilage while a boy was eating pork and cabbage. He was "gulping" the food containing this bone and while the cabbage was swallowed the bone lodged. It was easily removed by direct esophagoscopy and the boy had no further trouble.

The second is a coat button which had lodged in the esophagus of a child just above the cardia. This foreign body had remained in the esophagus three or four days, the child in the meantime being able to take only a small quantity of food and water. It was removed by the direct method and the child promptly recovered.

The third is a plate containing four artificial teeth which a woman inadvertently swallowed while eating and which had lodged just behind the cricoid. No difficulty was experienced in removing the foreign body from the esophagus by the direct method.

The fourth is a piece of "pork chop bone" removed at the Louisville City Hospital eight or nine years ago. I was called late one afternoon to see the man who was choking, and was informed that he had gotten a bone in his throat. I took him to the dressing room and gave him a dose of morphine, then put a little cocaine in the esophagus and this bone was easily removed by the direct method. It had lodged behind the cricoid cartilage. The patient had no further trouble.

The fifth is a nickel which was the first foreign body I ever removed by direct esophagoscopy. It had lodged just behind the cricoid cartilage. Removal was accomplished without difficulty. The patient was a young child.

The sixth specimen is composed of two grains of corn removed from the bronchi of a boy eleven years old and another about nine. A peculiar feature about these two cases was that one patient came from Owensboro, and the other from Horse Cave, and they appeared within five days of each other. Both patients were without symptoms when I saw them. They had had initial spells of coughing and afterward became quiet. In both the grains of corn had lodged in the right bronchus near its junction with the trachea. Both were treated successfully by direct bronchoscopy and recovery was uneventful.

The seventh is a cockle burr which had lodged between the vocal cords of a girl aged eleven years. A significant incident in connection with this case was that the patient was brought to Dr. Taylor who took her to the children's hospital. She was intractable and could not be handled under cocaine, so a general anesthetic was administered by Dr. John Richardson and an attempt was made to reach the cockle burr with long forceps by the indirect method. They worked about two and a half hours but did not succeed in removing the foreign body from the larynx. I was then called and after introducing a Jackson speculum; the whole larynx came immediately into view and the cockle burr was removed without the least difficulty. They were much surprised at the ease with which the foreign body was extracted by the direct method. This case illustrates the difficulties which may be encountered in attempting to remove foreign bodies by the indirect method, and the ease with which they can be extracted by the direct method.

The eighth specimen consists of portions of the kernel and shell of a hickory nut which had been inhaled by a boy of nine, the patient having been brought here from the country. He was immediately taken to St. Anthony's Hospital and in about fifteen minutes after being etherized the larger piece of hickory not shell was removed. It did not occur to

me that the child might have two pieces of hickory nut shell in his lung and the operation was terminated. The next morning the nurse told me that the child had two severe paroxysms of coughing during the night. I then became suspicious of another foreign body and asked the father to allow me to perform a second operation but he refused. The patient had an exceedingly stormy convalescence and five or six times during the next two weeks death seemed imminent. When the remaining portion of the hickory nut shell impinged against the vocal cords immediate spasm of the glottis occurred and the child would become cyanotic and cease breathing. The foreign body would then again gravitate into the lung and immediate improvement occur. Fortunately at the end of the second week the child expelled the second piece of hickory nut shell and made a complete recovery.

The ninth is a bean removed from the youngest individual I have ever successfully operated upon by the direct method. A baby ten months old was crawling about the floor while its mother was measuring some beans preparatory to planting. Naturally the child put some of the beans in its mouth and one of them was inhaled. I saw the patient the night following inhalation of this bean. I used the smallest bronchoscope made which barely admits the passage of a pair of grasping forceps. The child was placed on the table and without an anesthetic the bronchoscope was introduced beyond the vocal cords into the right bronchus where I could see the foreign body. However, I was barely able to "nick" the bean and was successful in removing only a small portion of it. After persisting for about forty-five minutes I ceased my manipulations, because it has been found that a number of instrumentations of short duration is much more successful and less fatal in young children than one prolonged instrumentation. As a result of pressure of the bronchoscope upon the vocal cords within twenty-four hours the patient developed edema of the glottis necessitating immediate tracheotomy. The child became perfectly comatose and was again taken to the operating room and a tracheotomy performed without an anesthetic. This relieved the immediate symptoms, the child's general condition improved, and three days later I did a low bronchoscopy, i.e., the bronchoscope was introduced through the tracheotomy opening, and finally the remainder of the bean was removed. I then inserted a tracheotomy tube, and immediately further complications developed. Evidently the curve of the tracheotomy tube did not fit the curve in the trachea, or there was an offset present in this child's trachea. The bronchial excretions would accumulate and gradually obstruct the tube, and the child would become cyanotic. The nurses administered oxygen more or less constantly for two or three days. The tube was frequently removed, cleansed, and re-inserted, and the child would be temporarily relieved. On the third day following the tracheotomy I was called about midnight and informed that the baby was dying.

I had left the hospital about ten thirty P. M. and the patient was then in a fairly comfortable condition. The nurse said she thought there was little use of my coming to the hospital as there seemed nothing further to be done; but I went anyway and found the child barely breathing. I removed the tracheotomy tube entirely leaving the opening in the neck as wide as possible, and as I did so a violent paroxysm of coughing occurred and the child expelled a large mass of hardened secretion which was followed by relief. To overcome the edema I then cautiously injected a few drops of adrenalin chloride directly into the trachea. This treatment was continued at intervals during the remainder of the night, and the next morning the child seemed to be breathing easily and resting quietly. I then poured an oily solution of adrenalin which seemed to act better in preventing accumulation of the excretion. The edema subsided and the child finally recovered.

This was not only a very young patient but the case represents what Jackson says is a most fatal type of foreign body in the air passages. He places beans first, peanuts second, grains of corn third. The reason for the greater danger is that after a short residence within the bronchus vegetable substances swell and become macerated, infection develops quickly, the secretion collects behind the foreign body, inspiration is impossible, and the child develops septic pneumonia or abscess of the lung with fatal termination.

The foregoing cases represent routine work we may be called upon to do at any time, and I want to impress upon you the fact that unless immediate tracheotomy is necessary to relieve the dyspnea, it is far better to do nothing than to attempt to remove the foreign body by the blind method formerly in vogue. While I have heard men say that they had never seen a fatal case from lodgment of a foreign body in the esophagus or the bronchus where removal had been attempted by the blind method, we know that a number of such cases have been reported. It is easier to remove the foreign body if no attempts have been made at extraction with the bristle probang, coin catcher, etc., than if such attempt have been made, because they invariably result in edema. Sometimes the odema is sufficient to absolutely bury the foreign body in

the swollen mucous membrane making its removal practically impossible.

DISCUSSION:

I. A. Lederman: The work that I have done along this line has impressed me with the importance of everything Dr. Hall has said. I have seen two cases of edema of the glottis following instrumentation in the removal of foreign bodies for which I blamed myself. In the first case I inserted a tube in the throat of a child being prepared at the time to perform a tracheotomy if necessary. It was an O'Dwyer tube and no difficulty was experienced in its introduction at the end of forty-eight hours it was "coughed up" and there was no further trouble. In the second case I was prepared for any emergency which might arise, but it so happened that the edema subsided and the child recovered.

I recall two other cases which I would like to mention briefly to emphasize some of the points made hy Dr. Hall. One was a coffee bean in the bronchus in which I did not succeed in entire removal. The foreign body was easily located and, after crushing a portion of it was extracted, but search for the remainder proved futile. The patient had been on the table so long that I finally decided further instrumentation would be unwise and he was returned to bed with the expectation of possibly again placing him on the operating table after a lapse of twenty-four to forty-eight hours,—but this was unnecessary. After being placed in bed the child had a violent paroxysm of coughing and expelled the remainder of the coffee bean; in other words, I had removed enough of the foreign body to enable the child to expel the remainder. The patient made an uneventful recovery.

The other case was one in which I had to resort to low bronchoscopy to remove a cartridge shell. The foreign body had lodged in the left bronchus and why I was unable to locate it by the upper method I do not know. The diagnosis was confirmed by roentgenoscopy before removal was attempted. I knew the foreign body was there and was certain of its location yet could not find it. I did a tracheotomy and then with the greatest ease located and removed the foreign body without any trauma whatever. The child made an uninterrupted recovery.

The X-ray as an adjunct to the diagnosis of foreign bodies is exceedingly important. A negative plate means nothing in the presence of clinical evidence; a positive plate assists us a great deal not only in confirming our clinical diagnosis but in localizing the foreign body.

I want to emphasize another point mentioned by Dr. Hall, and that is the harm which may be done by instrumentation with the blind method. I do not mean to say that the indirect method in laryngeal work should be discarded, as we can do a great deal there by the indirect method; but where the foreign body has reached the lower air passages the indirect method has no place. As Dr. Hall has said the only emergency operation to be considered is a tracheotomy for relief of stenosis which may otherwise prove immediately fatal. When the foreign body has passed into the bronchus the immediate danger is over. The fact is we usually do not see the patient until some time after the foreign body has been swallowed or inhaled. As a rule there is a little cough with an occasional attack of dyspnea and a little cyanosis, then the child becomes quiet and the family do not call a physician. It is only when the child begins to "wheeze" and has fever for a week or ten days that a physician is consulted; and while it is not said to his discredit, the family doctor is not always capable of making the diagnosis probably because he does not get an accurate history. The diagnosis of a foreign body in the air passages is not always easy without a clear history unless the symptoms are typical.

I would emphasize two points: First, that we should not be too hasty, and second the instrumentation should not be too prolonged. For obvious reasons there is greater danger in attempting to remove a foreign body after a lapse of ten days than if the patient is seen earlier.

P. F. Barbour: I have seen two cases of foreign body in the upper air passages. One was a man weighing two hundred and fifty pounds. He was eating some pigs feet and inhaled one of the bones which lodged in the right lung. The point of lodgment was recognized by several different physicians, but no surgeon could be obtained at the time to operate on him. The man coughed constantly and finally in a violent paroxysm he expelled the piece of bone which was as large as my thumb.

The other patient was a child who had inhaled a peanut. I asked Dr. Hall to see the patient, and I want to say his removal of the foreign body by direct bronchoscopy was one of the most brilliant operations I have ever witnessed. I had no realization that in a trachea which was so very small he could introduce the bronchoscope and through this grasp the foreign body with forceps. However, he easily removed the entire peanut, and the child made an uninterrupted recovery.

W. C. Dugan: Where a foreign body has lodged in the trachea, and where dyspnea and cyanosis are prominent symptoms, there is no question about the advisability of immediate tracheotomy; but so long as the patient is quiet and the symptoms are not urgent, in my opinion tracheotomy is not indicated if the services of a skilled operator by the method of the essayist can be obtained. During a violent paroxysm of coughing the foreign body is still movable and when tracheotomy is made it is usually expelled; but if the patient has passed that stage and it

has impacted with edema, dyspnea and cyanosis, then tracheotomy should not be performed.

I do not believe a tracheotomy tube should ever be employed under any circumstances in such cases, for the reason that there is no indication for it. The patient will do better after opening the trachea without the tube than he will with it, since there is no danger of the opening closing by the wound secretions; then, too, it is much less trouble to keep clean.

G. C. Hall, (closing): I accept the amendment as offered by Dr. Dugan. I do not know that I shall ever use a tracheotomy tube again—most likely I will not. Certainly the last case mentioned in my report the child did better without the tube than with it.

Jackson has done more to illuminate this subject than any other man in the world. He recently had made from a special design a set of tracheotomy tubes to overcome the difficulty of meeting the tracheal curve. The tube is made longer so the tip reaches to the bifurcation of the trachea.

When the child is having paroxysms of coughing we know the foreign body must be between the vocal cords and the tracheal bifurcation. Under these circumstances tracheotomy will nearly always be successful and the foreign body may be thus easily removed. The only objection to it is that if you can remove the foreign body without resorting to tracheotomy, you are just that much better off.

I want to thank Dr. Lederman for mentioning the diagnostic value of the X-ray. I do not know why I neglected to say something in regard to this exceedingly important method of localization of foreign bodies. However, if a week has elapsed between the taking of the X-ray and the time we see the patient, the plate is of no service whatever. The picture should be taken and developed immediately prior to bronchoscopy, and sometimes it is advisable to also make careful fluoroscopic investigation

The question of anesthesia is important. For esophageal work no anesthetic should be used in young children, but local anesthesia is usually necessary in adults. Generally no anesthetic is best in very young children for bronchoscopic work; in fact, in most instances an anesthetic is of decided disadvantage. Adults may require anesthesia. When Jackson stated three or four year ago that it was possible to introduce the bronchoscope and allow it to remain in the patient's lung for two hours without an anesthetic, the majority of us did not believe it; but Jackson has a way of proving things, and now everybody knows it is possible.

It is unwise to wait too long before removing a foreign body. It is going to be expelled by the patient, as a rule this will happen within the first twenty-four hours. A physician recently telephoned me that a patient of his had inhaled a piece of celery, and asked me to come immediately to see if I could remove it at once. I suggested that we wait until the next morning, as I believed in the meantime the foreign body would be expelled—which proved true. During the night the patient had a violent paroxysm of coughing and the piece of celery was expelled. In another case a small child expelled from the trachea or bronchus a "baby pin" which had been inhaled a few hours before. Expulsion of these foreign bodies does occur occasionally.

I do not want the members of this society to get the idea from my case reports that there are no failures in these cases. There are failures. We are not always successful in the removal of foreign bodies. Sometimes we imagine we can see them, we know where they are, we have located them with the X-ray, and yet we cannot remove them. I recall one fatal case in a baby of eleven and a half months who was in a very serious condition when brought here. The history was that the child had inhaled a bean. There was a membrane extending from the lower edge of the vocal cords downward into the trachea. I removed this membrane and could see the bean, but was unable to remove it. In another case I failed to remove a grain of corn from the right bronchus. There was considerable edema and the foreign body had been in the bronchus five days when I saw the patient. There was no doubt about the corn being there, because the upper right lobe of the lung showed the characteristic obstructive physical signs. The child had no cough and no fever, with the history of having swallowed this grain of corn five days previously. Whenever I attempted to introduce the bronchoscope beyond the bifurcation of the trachea, the child ceased breathing; and we could not make her breathe again until we withdrew the instrument.

There are failures in this work and there always will be failures excepting in the hands of such men as Jackson; he has practically no failures,—the rest of us all have them.

Tropical Medicine—Intestinal Lesions in Manila.—Crowell (Phil. Jour. Sci., September, 1914) summarizes as follows the chief intestinal lesions encountered in one thousand consecutive autopsies formed in the department of pathology of the College of Medicine and Surgery in the University of the Philippines during the months from August, 1912, to February, 1914:

Aside from the incidence of intestinal parasites and tumors and the lesions in bubonic plague, intestinal lesions have been encountered in 292 cases. In this series Asiatic cholera (on account of an epidemic occurring during this period) stood first numerically. Second in importance was intestinal tuberculosis, and attention has been drawn to the possibility of the occurrence of dysenteric symptoms in this condition and to the perforation of intestinal ulcers in three cases.

AN INTERESTING PATHOLOGICAL EXHIBIT.*

By E. S. Allen, Louisville.

The following case histories are briefly reported and the specimens exhibited merely to illustrate various types of pathology encountered in routine surgical work.

(1) The first specimen is a colloid tumor which weighed when removed twenty-eight and a half pounds. The case is interesting because of the unusual origin of the tumor, i.e., it was retro-peritoneal and originated from the lower posterior portion of the cervix uteri. The uterus and the intestines were pushed upward nearly to the umbilicus, there being nothing in the lower abdomen excepting the sigmoid and rectum which were lying over the top of the tumor. At the time of first observation the patient was in a serious condition, being much emaciated and the abdomen was enormously distended.

Based upon inspection and the clinical history the tentative diagnosis of large ovarian cyst was made. Owing to the condition of the patient it was deemed advisable to introduce a large trocar under local anesthesia and withdraw some of the fluid to afford temporary relief, then allow the patient to rest for a few days before performing a radical operation. She was extremely nervous and restless, having been unable to sleep for several nights. Her pulse was very rapid and weak; temperature slightly above normal. Upon attempting to introduce the trocar some resistance was met, but after perforating the parietal peritoneum about an ounce of straw-colored fluid escaped which immediately became solid or gelatinized.

Considering the fact that the patient was already much exhausted and in a serious condition, I finally concluded it would be inadvisable to postpone operation. She arrived in Louisville at one o'clock P. M.; at three she was aspirated; at four a six inch abdominal incision was made under local anesthesia to determine the origin and type of tumor present. We then administered ether and after making a larger incision discovered that the tumor was not pedunculated, nor was it intra-abdominal; it was retro-peritoneal and attached to the posterior portion of the cervix, the rectum and sigmoid lying over the top and one side of the tumor. Removal of the tumor was found impossible through the abdominal incision although it extended practically from the ensiform cartilage to the pubes. The tumor was accordingly incised and about ten pounds of colloid material removed by pressure, thus reducing the size of the tumor so it could be delivered through the wound.

After removing the tumor and holding the parietal peritoneum upward out of the way an enormous cavity presented, the abdominal aorta and iliac vessels being in plain view. Fortunately there was but little hemorrhage after separating the tumor from its attachments. With hot sponges no difficulty was experienced in controlling the slight oozing, and not a single vessel had to be ligated excepting where the tumor was attached to the cervix. Hysterectomy was not performed because investigation showed a normal uterus, although it was somewhat engorged from obstructive pressure. A cigarette drain was placed in the bottom of the cavity and the external wound closed.

The patient has been practically normal since the operation, begging for something to eat, laughing, talking, joking, etc. There was little handling of the intestines, as they were already pushed upward out of the way.

(2) The second specimen is an hypernephroma of the kidney. The patient, a man about fifty years of age, was examined at the Louisville Public Hospital some time ago, and why the nature of the pathology was not recognized I do not know, as he had been having frequent attacks of hematuria and had a tumor which reached almost to the umbilicus on the left side. I believe an enlarged spleen was suspected, as he complained of severe pain in the left side and had a low leucocyte count.

After obtaining the history of repeated attacks of hematuria, and while manipulating the tumor, the patient expressed a desire to urinate, and voided six or eight ounces of almost pure blood. A roentgenoscopic examination was then made to determine whether or not he had a renal calculus; the X-ray plate was negative. During cystoscopic examination after the bladder had been thoroughly irrigated, pressure upon the tumor caused blood to spurt from the left ureter. I then felt certain he had a malignant kidney and nephrectomy was performed. The venous supply was enormous and the kidney was greatly enlarged.

A peculiar feature was that the veins of the left testicle felt as large as my finger, and the left cord and accompanying vessels appeared to be more than one inch in diameter, reminding one of genital elephantiasis. The varicosity had markedly diminished since removal of the kidney.

The patient had done very well since the operation, but the history is that nearly all hypernephromata recur. So far as could be determined none of the growth was left attached to adjacent structures.

(3) The next two specimens illustrate two

*Clinical report before the Jefferson County Medical Society, June 17th, 1918.

types of tumors of the ovary. The first is an ovarian fibroma which is of little interest, excepting that such tumors are uncommon. The tumor had no connection whatever with the uterus or Fallopian tube, the ovary alone being involved. The second is an exceedingly interesting specimen, but has not yet been microscopically examined. I first saw the patient about a year ago with a large pelvic abscess which was drained per vaginam, two drainage tubes being introduced and left in situ for three weeks. The patient improved rapidly and insisted upon going home. At that time a mass was detected in her left side, and I advised her to remain in the hospital for further observation, but she refused.

About six months later the patient returned with another pelvic abscess larger than the first, which was also drained per vaginam; and as soon as she improved she again returned home. However, drainage continued and the sinus did not close. She had a great deal of discomfort, her temperature was constantly above normal, and she had lost about thirty pounds in weight.

She returned to Louisville a week ago with the sinus behind the uterus still draining, and the tumor still present in the left side. When the abdomen was opened many adhesions were encountered, and after separating these the tumor which I show you was easily removed. At first I thought it was a dermoid cyst, but upon opening the tumor many pus cavities were noted. The landmarks were destroyed by adhesions, the intestines, uterus and tubes being matted together.

The pathology may be due to tuberculosis, but as already stated the tumor was removed only a day or two ago and I have not yet had time to make a section for microscopic analysis.

DIAPHRAGMATIC HERNIA; REPORT OF A CASE.*

By Carl Weidner, Jr., and Carl Weidner, Sr., Louisville.

In the words of the late Dr. Beckman, of the Mayo Clinic, diaphragmatic hernia is "not so rare as to be a curiosity, but is always an interesting condition." In his report of three cases successfully operated upon at the Mayo Clinic he states that there had not been a single case reported in the literature of 1908. In the collected papers of the Mayo Clinic three cases are reported by Beckman, in 1909, one by Griffin, in 1911, and one by Balfour, in 1916, all of which were successfully operated upon.

*Read before the Jefferson County Medical Society, June 17th, 1918.

The condition is one that, until the use of the Xray, was seldom diagnosed excepting at autopsy. In 1874 Lightenstern had collected two hundred and fifty reported cases, of which only five had been correctly diagnosed during life. Griffin states in his report (1909) that there were about six hundred and fifty cases on record, of which only fifteen had been diagnosed clinically. Since the more frequent use of the X-ray for diagnosis of gastro-intestinal disturbances, the condition is discovered oftener.

There are two types of diaphragmatic hernia, (a) congenital, and (b) acquired. About eighty-seven per cent. are not true hernia, in that there is no sac. They occur on the left side in the proportion of eight to one, the liver on the right side affording a certain protection. The most frequent opening through which hernia takes place is through the esophagal opening. Other frequent sites are: in front between the sternal and costal portions of the diaphragm, and in back between the lumbar and costal portions.

Almost any of the abdominal organs may herniate into the thorax. In two hundred and seventy-six cases tabulated by Lachner, there were found in the thorax various organs, as follows:

Stomach	161 times
Colon	143 times
Omentum	96 times
Small intestines	83 times
Liver	45 times
Duodenum	35 times
Pancreas	27 times
Kidney	2 times

The causes of diaphragmatic hernia are: stab wounds penetrating the diaphragm, crushing injuries, especially sudden, violent crushing, violent twisting of the trunk, and sometimes following severe vomiting.

Diaphragmatic hernia must not be confused with diaphragmatic eventration, or elevation, in which condition the diaphragm may extend high into the thorax, the stomach also being in the thorax, but without perforation of the diaphragm.

The differential diagnosis must be made between pneumo-thorax and hydro-pneumothorax, and gas-containing subphrenic abscess.

The symptoms may not be at all commensurate with the anatomical disturbance. The usual symptoms are those of embarrassment of respiratory function, or of heart action, gastro-intestinal symptoms, and those of intestinal strangulation if this occurs. There is colic, mostly in the upper part of the abdomen, and there may be dyspepsia, eructations, nausea, and vomiting.

Physical signs: Tympany in the chest, which changes to dulness if the herniated organ is hollow and is filled with water. Breath sounds are diminished slightly or not at all, and vocal fremitus is usually undisturbed. The two most important physical signs are: dextro-cardia and intestinal noises in the chest.

CASE REPORTED BY DR. WEIDNER, SR.

Patient, male, aged fifty-nine; occupation merchant; of fair nutrition; married, father of nine living children. Date of first observation, December 6th, 1917. Past history: negative. Was rather fleshy until the age of fourteen. At that time while digging ore was caught under a mass of dirt and ore which caved in on him burying him about four feet under the surface. He remained unconscious for five days after this, and was in bed for five weeks, although he does not recall very much about his condition during this time.

After recovery he loafed about a year, and then returned to school. Later he entered upon mercantile life, principally as a salesman. He has never done any real hard manual labor since the accident, excepting a little gardening, etc., although he has done quite a bit of heavy lifting.

Chief complaints: Spells of "numbness," nausea, and colicky pains in lower abdomen, two to four times a year for the last twenty years. He usually gets relief from salts and hot water, although he has had to have hypodermic injections of morphine at times to relieve him until the salts acted. He has never had any pain above the diaphragm.

Last March while on a railroad train after dinner he became very ill, he was nauseated, had severe pain in the abdomen, and then a numbness rapidly extending upward toward the heart and head. Says he "felt as if he were going to die, as if every vital thing were about to be cut off," and then he became unconscious. A physician on the train gave him an hypodermic. After his ride from Ashland to Lexington, Ky., he regained consciousness, but still felt very sick until the next morning, at which time he resumed his journey.

This was the worst attack he had ever had, althought he has had two similar ones since, one this summer and one about three weeks ago, in November. Has been working quite hard the past few months and blames this for the attacks.

Examination of the abdomen revealed no particular abnormality. Lungs seemed about normal, excepting that the breath-sounds were rather feeble over the left lung, and there was tympanitic resonance. No intestinal noises were heard at this examination. The heart sounds were not heard clearly in the normal site, but more so to the right side; and percussion and palpation indicated distinct displacement of the heart to the right. The pulse was rather feeble. Blood pressure 125 systolic.

A roentgenoscopic examination was proposed and made (by Dr. Weidner, Jr.,) the next morning, and the true nature of the case was disclosed at once. A rather hurried barium enema was given and also a pint of barium in buttermilk per os, to further confirm the presence of the colon and stomach in the thorax. The greater part of the stomach and approximately one-half of the colon were in the thorax, and several loops of the small intestine appeared to be in the hernial ring.

My suggestions as to management of the condition were: careful work (avoidance of strain), particular attention to the bowel and to diet, and a tonic and simple digestants. Surgery was not proposed, as it was considered as a procedure of very doubtful result, since the defect in the diaphragm appeared to be of considerable size.

The patient has had no attacks since the one in November, and has been doing very well.

DISCUSSION:

Leon L. Solomon: In the case, reported by Dr. Weidner, it is interesting to note, that the patient is now fifty-nine years of age, that he was but fourteen, when the accident occured, which was responsible for the production of the diaphragmatic hernia and that this abnormality had therefore existed for a period of forty-five years, at the time the patient came under the observation of Dr. Weidner. In the meantime, the patient has married, raised a family, has been able to perform manual labor, without serious physical embarrassment, excepting upon the few occasions, referred to by the speaker. In these respects, the case is unusual and unique.

We know that hernia of the diaphragm may be either congenital or acquired. When acquired, it most frequently follows stab or gunshot wounds in the tendinous portion of the diaphragm,—less frequently in the muscular portion. It is also said to occasionally follow (1) inordinate, so-called hysterical laughing, also (2) persistent vomiting, as when following powerful emetics, or (3) from any violent muscular effort.

In many instances, hernia of the diaphragm results lethally, when it first occurs. Anomalies of the diaphragm are not uncommon,—children are born with a portion of the right or left side of the diaphragm missing, more frequently the right. It is interesting to note that babies die from congenital hernia of the diaphragm.

Stuart Graves: A case of diaphragmatic hernia occasionally comes to autopsy. In searching the literature of this subject some time ago I found record of about one thousand cases.

There have been few, however, in which either an ante-mortem or a pre-operative diagnosis has been made and later confirmed by necropsy or celiotomy.

Very few cases of diaphragmatic eventration have been reported. Bayne-Jones in 1916 tabulated forty-five cases. It is well to have a clear understanding of the difference between hernia and eventration. The latter occurs from expansion of a portion of the diaphragm thus allowing upward displacement of the abdominal viscera into the thoracic cavity; whereas in hernia there is a localized artificial opening in the diaphragm through which the viscera ascend into the thoracic cavity.

One instance is reported in which the lung protruded into the abdominal cavity through an apparently congenital opening in the diaphragm.

Carl Weidner, Jr., (closing): The case reported is clearly one of diaphragmatic hernia and not eventration. Where X-ray examination is made in eventration the contour of the diaphragm can be easily seen, which is not true in hernia.

An interesting feature is that this is undoubtedly a case of traumatic hernia. Dr. Balfour, in his paper published in 1916, cites a similar case in which a man suffered a violent crushing injury and was unconscious for six days thereafter,—just one day more than in the case reported.

I do not believe in this case a surgical operation would be feasible, because the stomach, the colon and possibly part of the small intestine are in the thoracic cavity, and evidently there i sa very wide hernial opening. Certainly there will be no particular danger of strangulation by pressure of the hernial opening on the intestine.

Carl Weidner, Sr., (closing.): As Dr. Graves has said, most of the cases of diaphragmatic hernia have been overlooked during the life of the patient, and it has been only since the advent of the X-ray that accurate diagnosis can be made.

The differentiation between hernia and eventration cannot always be made clinically, but accurate diagnosis can be made in practically every case by means of the X-ray.

The Behavior Chart.—Kempf (Am. Jour. of Insanity, April, 1915) presents a method for charting graphically the behavior of patients in mental diseases in such a way as to obtain a permanent record or curve. He finds that the striking dissimilarity of the curves plotted for the various psychoses suggests that, with the accumulation of further data, the isolation of suitable points and their arrangement in the most comprehensive series for the problems to be covered, this method of charting behavior might afford a material aid in diagnosis and in classification of cases.

THE WORKINGMAN'S HAND; THE FREQUENCY OF ITS INJURY AND THE CAUSE OF BAD RESULTS*

By C. Guy Forsee, Louisville.

During the period between October 16th, 1916, and May 8th, 1918, there were recorded in the office of Dr. Roberts and myself 2,000 cases of injury, and a brief analysis of these cases is the basis for presenting these observations. Of these cases 475 or slightly over 23 per cent. were injuries to the hand. Of these 263 or 13-+ per cent were of the right, and 217 or 10 per cent. were of the left hand.

	Right	Left
Punctured	6	19
Sprain	8	6
Lacerated and contused	171	136
Fractures	6	9
Loss of Nail	17	8
Thumbs	26	17
Infected	46	

Of these 2 per cent were primary infection, that is patients who sustained trivial injuries and became infected from neglect or carelessness. This I believe represents a much smaller class than that of the average workingman because all these men are instructed to report every injury to a nurse who applies antiseptics (iodine) to all wounds no matter how trivial. Of the primary infections the average length of time between receiving the injury and the time of disability or day of reporting for treatment was 8 days.

When such a great percentage of injuries occur to the hands their value from an economic viewpoint is at once apparent; hence the necessity for careful, well directed treatment to their injuries.

Our belief is that everything that can be done to prevent spread of infection and stop infection that has occurred should be the aim of the surgeon; for it is infection that stops the workingman and the spread of it that ruins the usefulness of the hand or maybe costs him his life.

Every man who has a spreading infection should be made a hospital case. We think from the viewpoint of the humanitarian and economist this is a necessity, and from that of the surgeon is good judgment.

The treatment of these cases resolves itself into general and local. The greatest indication in a general way for making hospital cases when spreading infection occurs is control of your patient: You are reasonably sure your patient is carrying out or there is being

*Read before the Jefferson County Medical Society, June 17th, 1918.

carried out your instructions when he is in a hospital; of this you are not at all sure if he is an outdoor patient. As an out-door patient he may be drinking, loafing or probably instituting treatment of which some neighbor has told him. With your patient in a hospital you can be sure that he is getting proper elimination, a very important factor, and that his nourishment is the right kind properly given. Many of these patients are generally "run down" and this is not a small factor against them.

Of local treatment the application of a proper splint is most essential. Moist dressings until the spread of the infection is stopped or until drainage is instituted. This, of course, should be done early.

Drainage should be done under the guidance of the eye, in a bloodless field. Neither a "medical incision" nor a "cutting to the bone," measure should be carried out. Our belief is that a moist wick provides the best mechanical means of drainage: A dry dressing should be applied after drainage is instituted if the infection is localized, if not a moist dressing covered with rubber, oiled silk or cotton should be applied.

From the working man's standpoint getting him back to work at the earliest possible time at which he can resume his trade is his object. To accomplish this the after-treatment is the most essential of all. These hands should all be put on splint but they should not be kept there until they are stiff. The dressing should be "taken down" every day and at earliest possible time passive motion instituted. This is where the skill of the surgeon is best tested. If motion is instituted too soon you have ruined your work and the whole process may spread possibly at the cost of the patient's life; if deferred too long possibly ruining a hand.

THE FORUM

Berea, Ky., Oct. 27, 1918.

To the Editor:

You will doubtless be interested to get a personal report of our experiences in the recent influenza epidemic at Berea College. Well we have had a wonderful time. It started in rather gradually but before the week was out we were in trouble sure enough. The cases came first by the score but soon by the fifty a day. First one head nurse, then the other, and then all but two of our student nurses. My assistant was one of the first to come down but as luck would have it, Dr. Lichtwardt happened in town on furlough and he buckled into the work with all his vigor and push and virtually saved my life. Without nurses and with 250 sick people to look after you can see the problem I was up against. We at once emptied two of our large dormatories and used one for boys and one for girls, keeping the main hospital for the really sick ones. It took a lot of work to keep transferring the sick ones to the hospital and the convalescent ones back to the dormatories but we did it successfully. The big problem was to find help to do the work. This we accomplished by having our best organizer take charge and spend all his time keeping empty beds ready and people to do the work. We had in each building some who took temperatures, some who gave medicines some who made up and served trays, some who carried bed pans, and an army of cleaners. We worked in shifts and kept a waiting list so that when one dropped out another was ready to take his place. We put two organizers to bed but the third proved to be the best of the lot. We actually had the matter so well in hand that at the last, in spite of the number we had put to bed we were better organized at the end than we were in the beginning. We had as many as 80 cases come in in one day and yet we never quite ran out of beds.

The best part of it all was that while our rush was on we had no very desperate cases. We have the students trained so that they come running as soon as they have a headache and if there was any excuse for it we put them to bed at once and made our diagnosis afterwards. Of course we got some that way who really didn't have the disease but in the long run it was a good policy for it did get them to bed early and that in my opinion is the most important point in the whole business.

The epidemic stopped as suddenly as it started and now we have only 75 in bed and they have about stopped coming. So far we have had two deaths, both from pneumonia, but we still have some very sick ones and may have to report more deaths later.

As I write there are in the hospital 9 pneumonias, 3 of which are double and 2 of which have empyema. Three have had bad kidney complications, a veritable acute nephritis.

Now I have told my tale. It makes me think of last year when Dr. South was here and we were fighting meningitis. Really this has been a wonderful experience to be able to hold things together and actually take care of so many when every trained person but myself on the job was in bed with the help of people some of whom didn't know one end of a thermometer from the other, seems almost like a fairy tale.

I am pretty tired these days, but so far the "flue" bugs hasn't touched me and I have had over 600 cases in all.

I am cordially yours,

R. H. Cowley.

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COUNTY SOCIETY REPORTS

Boyd—The Boyd County Medical Society held its annual meeting in Ashland, on December 16, 1918, and elected the following officers for the ensuing year:

President, A. J. Bryson, Ashland; Vice President, A. J. Hillman, Ashland; Secretary, J. M. Prichard, Ashland; Treasurer, J. A. Sparks, Ashland; Censor, H. S. Swope, Ashland; Delegate, J. W. Stephenson, Ashland; Alternate, J. A. Sparks, Ashland.

J. M. PRICHARD, Secretary.

Jefferson—The annual business meeting of the Jefferson County Medical Society, held December 16, 1918, resulted in the following officers being elected to serve in 1919:

Claude G. Hoffman, President; A. R. Bizot, First Vice President; W. Barnett Owen, Second Vice President; D. Y. Keith, Secretary; H. B. Scott, Treasurer.

C. G. HOFFMAN, Secretary.

Russell—The Russell County medical Society held its 30th annual session in the parlors of the Holt House, Jamestown, December 4th. Promptly at 9:30 A. M., the society was called to order by the vice president, J. B. Tartar. The president, L. D. Hammond, could not be present on account of a case of obsetetrics.

Minutes of the last meeting were read and adopted. Unfinished business was dispenses with. No new business.

Chas. A. Chumbley was nominated and duly elected to membership.

M. M. Lawrence could not be present, he being confined to his bed with pneumonia.

J. S. Rowe was not present on account of urgent call.

The following paid their dues for 1919: Chas. Chumbley, J. B. Tartar, A. V. Neathery, W. G. D. Flanagan, J. B. Scholl. Am sure the other members will send in their dues in due time.

Then came the talks by all, most of which were the war and influenza. Most all expressed their views as to the contagion and treatment. Each had treated from 150 to 250 cases with fair success at that time, December 4th, there were quite a lot of cases of the malady in the county, but it was gradually subsiding. Each doctor thought we would have more or less of the influenza during the winter. All of the doctors present gave more or less of their experience and treatment. Diagnosis was easy. We soon found out that our prognosis should be guarded as you see a patient to-day and give favorable prognosis and within eighteen or twenty hours patient developed pneumonia or some one of the afterelaps of influenza and often death would end the scene. So we were all very guarded about prognosis, so when asked about the patient we would answer

by saying, if so and so, don't develop he will "probably" get well. As to treatment, the doctors present virtually agreed on the same plan, for headache, application of cold cloths or ice bags to head; hot foot baths with mustard in the water; aspirin, sometimes opium and bromides. Backache and breast ache, mustard plaster to chest and spine. Hurting all over and fever, sponge bath with water and alcohol, aspirin, Dover's powder and quinine, until temperature was normal. Subnormal temperature and pulse and anorexia, sick stomach, give elixir iron, quinine and strychnia, every four to six hours, begin before the pulse and temperature drops, also give dilute hydrochloric acid after each regular meal. Nothing that I used seemed to give better results, also whisky was used (when it could be had), in toddy, or better, egg nogg, which seems to stimulate and also was a first class food to hold the system up through the disease.

If I saw the patient at the beginning I gave calomel, quinine, podophylin and Dover's powder combined, not enough to purge severely, but enough to act on the liver and bowels and skin, also gave the old fashioned ginger stew or tea (as recommended by Flint and Copeland) and by next morning the patient would tell you, almost every time, that he sweated all night and felt better, only a little weak.

From hemorrhage from the bowels, kidneys, uterus, nose or lungs, I did not try to stop it as I was sure that it was not dangerous and as the doctors have quit bleeding, nature just bleeds itself, showing, I believe, that we ought to bleed patients a little bit sometimes. It would, I am sure, do less harm than lots of the drugs, nostrums and patent medicines. A large per cent. of the case I saw had hemorrhage of some organ. I never did anything for it as I did not know what to do. All these patients are well to-day.

Another peculiar symptom was lumbricid worms. When I first began treating the influenza, I, as usual in treating children for anything,give a little santonine. In all these cases there were worms. In some cases enormous quantities of the worms would pass off by rectum and mouth. So I made inquiry of older patients and most of them told me that they had passed lots of worms or vomited them up or they would feel something in their throat or mouth and they would reach in with their finger and thumb and "snake" a big twelve or fifteen "incher" out of their throat. So this symptom staring me in the face, I made it part of regular treatment to give santonine and in every case was successful in getting rid of a big lot of worms and had less sick, weak stomachs and anorexia. Just what causes worms to pass off by rectum or to be vomited, I do not know, unless the nasty, filthy, toxemic stomach and bowels of an influenza patient is not a good food for the worms and they try to to find a more congenial clime, is my guess.

Some years ago J. G. Carpenter insisted that I read a paper before the Russell Springs District Medical Society on worms, and to please the doctor, I did my best and then Dr. Carpenter complimented me by saying it was the "wormiest paper" he ever heard of. So I would say more about worms at this meeting but am anxious for others to give their experience with worms during the recent and present pandemic of influenza; at least I would like to know more about it.

I had but one case of influenza that was over fifty years of age, and one or two under one year; twenty to thirty years was the age of greatest mortality. All the doctors agreed on treatment. Isolation, pure air, (that is air that has not been used by someone else). Nearly all cases were given calomel, quinine, sponge baths, cold cloths to head, mustard plaster to chest or spine, iodide of ammonia, or some of the preparations of ammonia for cough, bromides with opiates for pain or restlessness, hot foot baths, reasonable amount of whisky or brandy, administered internally, externally and (as Dr. J. G. Carpenter sometimes expresses it) eternally. Our experience convinces us that nothing we tried would equal it to hold up the patient during the critical period so if I get the influenza, if I can't get some one to bring it to me, I will move to where it is until I get able to get back to Russell.

Were very glad to be informed that there was a vaccine or serum which would prevent, or immunize against influenza and pneumonia.

Next on the program was the election of officers, which resulted as follows: L. D. Hammonds, President; J. B. Tartar, First Vice President; A. V. Neathery, Second Vice President; J. B. Scholl, Secretary and Treasurer; Chas. A. Chumbley, W. G. D. Flanagan, M. M. Lawrence, Censors; J. S. Rowe, Delegate; J. B. Scholl, Alternate.

It was suggested and all agreed that after the influenza had subsided, the physicians of the county would resume its public health work by holding public health meetings in a number of localities in the county. We have been trying this plan for about two years and I am sure it has been the greatest work we have done in the way of public health work. In fact, I speak for myself, we have talked and instructed and lectured until the laity has gotten pretty well up or posted to an extent that they will ask you very difficult questions relative to public health sanitation, disinfectants and fumigation. It has make me work overtime to answer some of the questions they prudently ask and they are entitled to know. So I will just have to get a little further back in my discussions and let some of the other doctors do all the answering or I will have to go and take a course on these subjects. I don't know which I will do but compelled to do one or the other.

John D. Combest has moved from our midst to Moreland. However, he is not out of the State a... I am sure he will joint the Lincolu County Me...al Society. Our society regrets to give up any of its members, but we have the pleasure of recommending Dr. Combest to the county society he wishes to join.

J. B. SCHOLL, Secretary.

Whitley—The Whitley County Medical Society met on December 12th, at the office of A. A. Richardson, with the following members present:

W. H. Parker, Red Ash; J. F. Wilder, Corbin; J. H. Parker, Corbin; E. S. Moss, Williamsburg; L. S. Silver, Woodbine; E. B. Stonesifer, Bon Jellico; M. W. Steele, Corbin; G. G. Ellison, Williamsburg.

The President being absent at the opening of thes meeting, J. H. Parker was elected chairman.

There were no papers to read, but we had some good talks on various subjects, and especially with reference to creating more interest in our medical society.

The society voted to meet again in April, and the meeting to be held in Corbin. M. W. Steele and the Secretary were appointed to get up a program and make arrangements for said meeting.

The society also elected officers for the new year: E. S. Moss, President L. S. Silver, Vice President; A. A. Richardson, Secretary, M. W. Steele, Delegate; J. H. Parker, Alternate; W. H. Parker, J. F. Wilson and C. G. Ellison, Board of Censors.

There being no further business, the society adjourned. A. A. RICHARDSON, Secretary.

Warren—The regular meeting of the Warren County Medical Society was held in the City Hall, Wednesday, December 11 at 1 P. M., with the following doctors present: J. H. Souther, Cartwright, Moss, Singleton, Neel, Stone, Simmons, J. F. South, L. H. South, Martin and Capt. E. M. Frey, of Guthrie. The first order of business was election of officers, which wasasfollows:

J. H. Souther, President; W. P. Drake and W. L. Neel, Vice President; T. H. Singleton and W. E. Keen, Delegates; L. H. South, Secretary and Treasurer.

T. W. Stone reported the Epidemic of Influenza that visited Bowling Green in October.

The subject was discussed by all present.

W. C. Simmons had used the vaccine in fifteen hundred cases and did not have a single death in those cases where the vaccine was used. People came to him from several surrounding counties for inoculation.

L. H. South brought some of the Rosenow vaccine for distribution to the doctors and spoke on the method of its preparation.

The society adjourned to meet the second Wednesday in January. L. H. SOUTH, Secretary.

NEWS ITEMS AND COMMENTS

NO MORE PHYSICIANS TO BE COMMISSIONED IN MEDICAL CORPS.

At 10 o'clock on the morning of Nov. 11th, the War Department discontinued the commissioning of physicians in the Medical Corps.

This condition, in all probability, is permanent and no further consideration will be given applicants for a commission in the Medical Corps until further notice.

Beginning on January 1st, 1919, Dr. A. O. Pfingst, Louisville, will discontinue the practice of Otology, Rhinology and Laryngology, to limit his work to Ophthalmology.

William Scheppegress, New Orleans (Journal A. M. A., Aug. 17, 1918), says that since it has been definitely established that hay-fever is due to pollen, it would seem to be a simple matter to abolish the disease by eliminating the causal plants from certain localities. The history of hay-fever in his attacks do not occur. He advertises the place and a hotel is built. The first year its reputation is established, hay-fever does not appear. The next year plans are extended, the forest is cleared and cultivation begins. Weeds are introduced by stock and hay-fever becomes common. For this reason the established resorts scientifically based on the exclusion of all weeds have maintained their reputation and popularity. The elimination of hay fever in towns and cities is simply a question of time, depending on the thoroughness with which the noxious pollen-bearing weeds are extirpated. It is popularly believed that hay-fever is increasing, and this is partly supported by statistics, but the reason for this is not increased susceptibility but increased exposure. The true reason is that the ease of transportation has enabled thousands of city residents to move out into the country into localities too often infested with hay-fever pollens. There are a number of places in the United States and Canada where meteorological or topographic condition prevents the growth of the hay-fever pollen-bearing weeds. There are several varieties of hay-fever, however, and a sufferer from the East, sensitive to the common ragweed form, might find relief in California, where sagebrush type exists, and vise versa. Contrary to popular belief, altitude is no protection unless it exceeds 6,000 feet, where the ragweed does not grow, though some of the wormwoods are found at this height in the Rocky Mountains. Scheppegrell gives a list of the hay-fever resorts in the United States and Canada, and says that the common ragweed and allied species are not found in Europe, but the grasses are common so that the vernal type of hay-fever is highly prevalent in many sections over there.

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EDITORIAL

VACCINE FOR THE PREVENTION AND TREATMENT OF INFLUENZA AND PNEUMONIA.

The advertising pages of the JOURNAL contains an announcement "How to Secure Influenza Vaccine Free" and every physician in the State should avail himself of this opportunity, and secure this vaccine and use it for the immediate protection of his clientele.

Early in the epidemic, Dr. Lilliam H. South was at the Mayo Clinic and saw much of the work of Dr. E. C. Rosenow who was making large quantities of the vaccine, and using it extensively in Rochester and nearby cities, with remarkable results. The Mayo Clinic agreed to furnish an unlimited amount to the State Board of Health and under the careful supervision of Dr. South the vaccine is being widely distributed.

Prophylactic immunization has been practically demonstrated in a number of the large industrial plants in Philadelphia; notable among the largest of these plants was the Philadelphia Electric Company. Dr. Bowes, physician in charge of this plant, undertook the inoculation of 4,000 men. On October 17th, three weeks after the second inoculation, only three men had contracted influenza, with no deaths. Some of the employees who had contracted the disease before the inoculation was begun were treated with the influenza vaccine and not one of these cases died.

The type of vaccine perfected by Dr. Rosenow at the Mayo Laboratories is an "antigen" and is believed to have greater power against pneumococcus infection than the vaccine made by other methods.

Dr. Solomon Solis Cohen, one of the greatest American therapeutists, believes "The value of prophylactic inoculation against influenza and pneumonia to be of as great value as quinine in malaria."

In a memorandum issued to the officers, enlisted men and employees of the War Department, Col. E. F. Russell, the greatest living authority on serum therapy, cites the following: "At Camp Upton during the ten weeks from the period of vaccination until the troops went overseas, no cases of pneumonia due to the types of pneumococcus protected against (I., II., III.) occurred among the inoculated troops. The incidence of pneumonia from other organisms was only one-tenth as high among the inoculated as among the uninoculated, although previous to inoculation the incidence of pneumonia had been equal in the two groups.

It is interesting to note in this connection that the Chicago Health Department has now used 100,000 doses of the Rosenow-Mayo vaccine, with a gradual lessening of the death rate and with no harmful results from the vaccine, and this experience is being repeated in various sections of the country.

Large quantities of the vaccine has now been used in this State and reports are being daily received as to its effectiveness and harmlessness.

In one small rural community in the State sixty persons were inoculated by Red Cross Nurses. In an epidemic which spread later in that community, none of the sixty who were inoculated contracted the disease.

Dr. E. C. Rosenow reports that of the patients that were admitted to the hospitals of Rochester with influenza and pneumonia, where approximately one-half of the population had been inoculated, nearly all the patients were in the uninoculated group. He reports that in one of the hospitals in which the nurses were inoculated no cases developed subsequent to the inoculation, although the nurses continued to care for influenza patients and that similar apparent protection was afforded to the personnel of other hospitals by inoculation.

The test recently made by the Surgeon General of the Army in an effort to estimate the

value of prophylactic inoculations against influenza and pneumonia is of much value. In an army division of 27,000 men, of 12,000 who received the inoculations there was an incidence of only 8 cases of pneumonia, with no deaths. Of the remaining 15,000 who did not receive the inoculations, 800 cases of pneumonia occurred with 120 deaths.

With the rapid accumulation of reliable statistics and reports from various sources, it may now be safely asserted that the harmlessness of the procedure has been thoroughly established and the effectiveness of the vaccine as a prophylactic against influenza and pneumonia has passed the experimental stage.

World wide experience with the present pandemic and careful review of the pandemic of 1890 and 1891 afford us the best basis from which to draw our conclusions in estimating the future inroads of the epidemic in this country.

Carefully kept records of the health departments of some of the large eastern cities, show that while the epidemic of 1890 apparently spent its force during that same year, that during 1891 there was a constant outcropping of the disease, the death rate from pneumonia in 1891 was higher than during 1890, and that the disease continued to recur until 1893, three years from the beginning of the epidemic.

While the present pandemic begun in Europe in the early spring of 1918, cablegrams from day to day inform us of the continued or recurring prevalence of the disease in France, England and Germany.

The object lesson is plain and that the situation in this country with regard to the future prevalence and recurrence of the disease will be a parallel to that of Europe and similar to that of 1890 and 1891 is conservatively believed. With this knowledge to guide us, it is plain there must be no false sense of security nor relaxation of our efforts to effectually stamp out the disease. Precautionary measures should be continued; overcrowding, bad ventillation and promiscuous coughing and sneezing should be discouraged and the general public should be constantly educated to the great importance of keeping themselves physically fit by proper habits, good hygiene and sanitation in the homes. As natural immunity to the disease does not apparently exist, a general and concerted effort on the part of the profession should be made to build up a state of immunity among the people by use of preventative vaccine.

THE STATE LABORATORY AND DIPHTHERIA MORTALITY.

Probably no more notable stride has been made in modern clinical medicine in Kentucky than the lowering of the death rate from diphtheria.

The great fatality that formerly attended the disease and the hopeless prognosis in pre-antitoxin days is in striking contrast to its present successful management. It is well known that even after the curative and prophylactic value of diphtheria antitoxin has been well established, that the timidity of many of the profession in its use and the prejudice of the laity contributed toward a still high mortality. Since a better understanding of the disease itself, made possible by laboratory methods of studying the disease by the cultures made from the throats of patients and the bolder use of antitoxin, it is gratifying to note that there has been a steady decrease in the number of deaths.

Unfortunately, even after the effectiveness and harmlessness of diphtheria antitoxin had been well known to all of the profession, many lives were sacrificed because of the fact that it was not available to many of our poorer people on account of the exorbitant price, and this alone caused many physicians to withhold its use too long in some cases and their failure to use it at all in others.

This grave situation was overcome by a well conceived plan of the State Board of Health by which diphtheria antitoxin, manufactured by the best biological houses, was, through the instrumentality of the county health officers and fiscal courts, made free to all indigent persons and cheapened to all others. It is conservatively estimated that this plan of making its antitoxin easily available to all has saved hundreds of lives.

A large supply of antitoxin is kept on hand constantly at the State Laboratory, and other known distributing points throughout the State and supplied immediately on the orders of health officers and physicians.

Previous to the passage of the Vital Statistics law, there was no means by which the annual death rate from diphtheria could be ascertained. Vital Statistics records for 1912, the first year of vital statistics in this State, show 740 deaths from diphtheria as compared with 240 deaths in 1918. This reduction in the death rate becomes still more apparent when it is understood that while the death rate has been reduced 67 per cent from 1912 to 1918, that the percentage of reduction is still greater when compared with the increased population of 1918 over 1912.

This result has been made possible through the valuable assistance of an ably conducted

State Laboratory as an auxiliary to the State Board of Health. In this phase of health work, the State Laboratory, in addition to its numerous other activities, has received thousands of specimens from suspicions throats for culture and the result of each examination, whether positive or negative, has been promptly mailed or telegraphed as desired. making it possible for early diagnosis to be made and an early administration of antitoxin encouraged. The records of the Laboratory show a large number of isolated cases of sore throats in children frequently regarded in the beginning as tonsilitis to be diphtheritic, and many cases so treated without making cultures of the throat have suddenly assumed the characteristic symptoms of diphtheria frequently too late to be relieved even by the use of antitoxin..

Some confusion still exists in the minds of many of the profession concerning isolated cases of diphtheria, the origin of which cannot be traced to any known sources and hence the diagnosis of these cases is often delayed and disaster frequently results. The records of various laboratories show these isolated cases to be caused by carriers of the disease, persons who are otherwise well, recently recovered from the disease or who are immune to it, harboring the bacillus in their throats and conveying it by contact with persons who are susceptible.

In one county in the State alone swabs of 400 throats of presumably healthy school children were sent to the State Laboratory for culture, the result showing a number of carriers among these apparently healthy children. These carriers were promptly treated and no diphtheria has developed in that community for two years.

In dealing with diphtheria, in the light of our present experience, it may be safely said in summing up:

First, that the mortality can be further lowered if all cases of sore throat are regarded with suspicion, especially in seasons of the year known to be favorable to the prevalence of diphtheria and a culture of the throat in all doubtful cases be promptly made and the administration of antitoxin given as a preliminary even before the diagnosis has been confirmed by laboratory findings.

Second, there should be no hesitation in a known case of diphtheria in giving early large doses of antitoxin frequently repeated.

Third, with education of the heads of families to call a physician early together with the use of the State Laboratory freely at his service to confirm or make the diagnosis and the antitoxin now made easily available to all, there should be few, if any, deaths from that disease.

DR. HEIZER AT IT AGAIN AND AGAIN.

At its Annual meeting in Louisville the first week in September, the House of Delegates of the State Medical Association, which represents the medical profession of Kentucky as fully and legally as Congress does the people of the United States, after patiently hearing Dr. Heizer make a spectacle of himself in his own defense, by unanimous vote, repudiated his vaunted claims for leadership in such an unmistakable way that no member could have left the hall without a feeling of pity and shame for him. Not content with this rebuff, three days later, all by himself, as soon became a habit with him, he arranged for a straw vote by persons of his own selection, which, as the answers were not to be signed, or the voter in any way identified, might as well have been counted before he sent them out. This letter is as follows:

Bowling Green, Ky., Sept. 9th, 1918.

Dear Doctor:

This is a straw vote to determine the extent of the truth or falsity of a statement given out to the press at the meeting of the Kentucky State Medical Association in Louisville, when it was declared that the opposition to the so-called "McCormack Machine" did not represent "One-half of one per cent of the doctors in Kentucky."

This letter is being sent to a number of physicians in different parts of the State and by this method of a secret ballot, it may easily be determined what the wish of the medical profession is.

THE QUESTION:

IF YOU HAD A VOTE IN THE MATTER, WOULD YOU VOTE FOR A CHANGE IN THE MANAGEMENT OF MEDICAL AFFAIRS IN KENTUCKY? NO.....

(Write yes or no)

It is not necessary to sign your name, and the return of this sheet by next mail is respectfully asked.

Fraternally yours,

W. L. HEIZER,

As no announcement of the result of this vote has ever been made, it was probably as unsatisfactory as the one given above, which is published just as it was returned to the JOURNAL.

Three weeks later, and sometime after the Court of Appeals had decided that the State Tuberculosis Commission had been out of existence since the 17th of June, in an effort as Secretary of that defunct organization to turn over to himself as Secretary of the State Health and Welfare League, a private and unincorporated paper concern, which he had never called together since it was organiz[illegible].

hundreds of dollars worth of property of the State, all by himself again, he pretended to make the following minute on the record book of the Commission:

> Acting under the authority given to the secretary, in an effort to promote the work of the Commission as outlined in the law creating it, the secretary has this day offered to the Kentucky State Health and Welfare League its office supplies, furniture and equipment as a gift, or appropriation.
>
> Under the law signed by the Governor of this Commonwealth on March 27th, 1918, no provision is made for the transfer of any property to the State Board of Health which is made to assume the functions of this Commission. The Kentucky State Health and Welfare League is an organization which is affiliated with the National Tuberculosis Association, is duly organized and operating under a constitution and by-laws and governed by a Board of Directors and an Executive Committee, composed of leading and influential citizens of the Commonwealth. In the absence of a regular meeting of the Commission, this action of the Secretary is taken under the authority granted to him at the time of the adoption of his report to the Commission in January of 1917, and subsequently.
>
> October the first, 1918.
>
> W. L. HEIZER,
> Secretary.

Seemingly satisfied that he could not accomplish his purpose under this minute, after waiting a month, all by himself again, he made another minute on the record book of the Commission, based on another straw vote, and, in order to make his action triply sure, this time he seems to have made it a drag net affair by including members of the new State Board of Health, the State Tuberculosis Commission and the State Health and Welfare League, as follows:

ORDER OF THE STATE TUBERCULOSIS COMMISSION.

> The Legislature of Kentucky enacted a law which was approved by the Governor March 27, 1918, by which the State Board of Health was empowered to create a Bureau of Tuberculosis to perform the functions of the existing State Tuberculosis Commission; and no provision of the said law was made for the disposal of the property and office fixtures of this Commission.
>
> Under Section 4711-b Sub-Section 3, this Board is empowered "With full authority to cooperate with the public authorities, state and local boards of health, the National Association for the Study and Prevention of Tuberculosis, medical societies and other organizations for the study and prevention of the disease."
>
> "The Kentucky State Health and Welfare League is a fully organized body whose Constitution and By-Laws provide for a Board of Directors, which is composed of prominent, leading citizens of this State. One of the purposes as set forth in its Constitution is to cooperate with this Board for "Dissemination of knowledge concerning the causes, treatment and prevention of tuberculosis; investigation of the prevalence of tuberculosis in the State of Kentucky, and the collection and publication of useful information; the encouragement of adequate provisions for consumptives by the establishment of sanitoria, dispensaries and otherwise."
>
> The State Board of Health has not formally or otherwise assumed the functions of this Board, and no official notice has been received by this Board that it has done or intends to do so.
>
> This Board desires to assist in any way within its power, any organization which it believes is capable of reducing the sick and death rate from tuberculosis and it, therefore, by virtue vested in it by law, hereby appropriates to the Kentucky State Health and Welfare League its office fixtures, appliances, and property, which it now has in its possession for the State and directs its Executive Secretary to deliver to said League said fixtures, appliances and property when he formally transfers to the State Board of Health the official records of this Board.
>
> Those voting for the above order included the following members: Dr. A. D. Willmoth, Dr. E. H. Maggard, Mrs. J. L. Stunston, Dr. T. R. Welch and Col. R. C. Oldham.
>
> W. L. HEIZER,
> Secretary.
>
> Date:—October 31, 1918.
> Approved:
>,
> President.

I hereby certify that the above are true copies taken from the Record Book of the State Tuberculosis Commission, of which I am now the custodian, for the dates indicated.

Given under my hand and the seal of the State Board of Health, this January 7, 1919.

J. N. McCORMACK, Secretary.

Still failing to get things to his liking, Dr. Heizer embodied the substance of both of these minutes into an authoritative official opinion, which he made a strenuous effort to have the Attorney General of the State sign for him.

At this stage of these singular proceedings the President of the State Health and Welfare League, a neighbor of the Doctor, who had never been asked to attend a meeting, for the

exeellent reason that none had ever been called or held, began to urge a meeting, and a rigid aceounting for all of the thousands of dollars whieh had passed through the hands of the Executive Seeretary. Insisting upon this until something had to be done, without the pretenee of ealling a meeting of either the Exeeutive Committee or Board of Direetors of the League, and seemingly this time without even a straw vote, all by himself, in an effort to eliminate from the organization all who might be f' miliar with his peeuliar methods, he sent out the following letter to sueh a list of persons in and outside of the direetory as best suited his purposes:

Bowling Green, Ky., Nov. 19, 1918.

Mr.,

Louisville, Kentucky.

Dear Sir:

It is my official duty and my pleasure to inform you of your election to the Board of Directors of this League.

I am enclosing you a pamphlet which outlines its purposes and scope of work. I feel sure that its objects will appeal to you and and trust that you will be persuaded to give to the League your active interest and the use of your name and influence to assist in its humanitarian work.

It is very much desired that you accept a position on the directorate and that at your convenience we may receive assurance of your interest and cooperation.

Very truly yours,

W. L. HEIZER,

Executive Secretary.

No answer was made to the request to accept this honor.

Then, evidently not waiting long enough to reeeive the replies and, although the influenza restrictions had long since been raised as to both Louisville and Bowling Green, giving these restrietions as a reason for not calling a meeting long overdue, and an aeeounting which the by-laws written by himself required to be made quarterly, all by himself, not even the President knowing that it was being done, another "straw vote" was taken, not by any means of all of the Direetors or members of the Executive Committee, but only to sueh as he gave the franehise, as follows:

Bowling Green, Ky., Nov. 21, 1918.

Mr.

....., Ky.

Dear Sir:

It was planned to have an annual meeting of our League for the purpose of reviewing the work of the past year and making plans for next year. This was abandoned because of the restrictions on public meetings, imposed by the health authorities and it has become necessary to elect officers for the ensuing year by submitting to the Board of Directors the names of the following members recommended by our Executive Committee:

For President, J. Whit Potter, Bowling Green.

For Secretary, Mrs. J. L. Stunson, Mayfield.

For First Vice President, William S. Groom, Covington.

For Second Vice President, Rev. E. L. Powell, Louisville.

Honorary Vice Presidents, Dr. Geo. W. Armes, Frankfort, and Mrs. Lafon Riker, Harrodsburg.

For the Executive Committee, the following persons have been nominated:

Mrs. Don Taylor, Fulton.

Dr. B. E. Gore, Bardstown.

H. H. Cherry, Bowling Green.

Dr. T. R. Welch, Nicholasville.

Judge J. G. Tomlin, Walton.

Will you please indicate such of these persons whom you endorse for these offices and return this sheet, with your recommendations or disapprovals, at your earliest convenience.

Respectfully yours,

W. L. HEIZER,

Executive Secretary.

Having violated both the letter and spirit of the constitution and by-laws of his State Health and Welfare League in every proposition contained in the foregoing letters, seeming with the purpose of avoiding an accounting for funds entrusted to his care before any meeting of the League which might be called, and getting by with it up to the present time, in a concluding epistle to County Health Leagues, which under the new legislation and court deeisions have become auxiliary to, and a part of the maehinery of the State Board of Health, this man has just as obviously violated the injunetion of the Franklin Circuit Court and Court of Appeals, forbidding him to interfere in any manner with any aetivity or funetion of the Board. The letter follows:

January 7th, 1919.

Mrs.

....., Ky.

Dear Madam:

I am enclosing a form of contract, a form for requisition for funds and an explanatory statement concerning them.

This League assumes that you desire to continue your affiliation with the State League in order that constructive, co-ordinated work may be uniformly accomplished

throughout the State. It is to be regretted that the amount of money which we may be able to appropriate to your Association is not definitely known; but the terms of the contract will make the situation easily understood. It is being assumed that the full amount of our budget will be appropriated by the National Association but the only amount which is guaranteed to this League is its gross amount of the sales for seals in 1917. The amount which you will receive will depend upon the action of the National Executive Committee. Will you call together your Executive Committee and return the two copies of the contract and budget, at the earliest possible date.

I would appreciate it very much if you would give me the names and addresses of the Officers of your League and the names and addresses of the members of your Executive Committee and the Nurse, in order that we may bring our files up to date.

Miss Williamson, our State Supervising and Organizing Nurse, will shortly visit your league and I hope that the visit will be mutually profitable and satisfactory.

Trusting that we may be of large service to your community in this year's work, and with best wishes for the success of your organization, I am,

Yours very truly,
W. L. HEIZER,
Executive Secretary.

Except to publish these matters from time to time, for the information of the profession, it has been the policy of the JOURNAL and Board, under the advice of counsel, to ignore these indirect attacks, but it has looked recently as though it may become necessary to take the matter up again in the Courts.

A RECENT INNOVATION.

For fear a recent innovation, for Kentucky, would pass unnoticed, I take the liberty of writing this editorial. I record with pleasure the fact that my confrere, Dr. A. O. Pfingst, has discontinued the practice of diseases of ear, nose and throat and limits his future professional activites to Ophthalmology.

The beginning of medicine embraces all the ills of man, but the advance of knowledge brought us to the specialization period embracing, as it did, the ills of several organs. The Pioneers in eye and ear work in this country were Agnew, Roosa, Knapp, Webster, Noyes, Williams and others. All of these men originally combined eye and ear work.

Knapp continued to do eye and ear work to his death. His son and successor who was also trained for both specialties, upon the death of his father dropped otology and converted the eye and ear hospital into one for eye diseases.

Roosa published a text book on eye diseases but also published a separate one on ear diseases.

Dr. Pfingst's step while a courageous one is also a correct one, in that it is keeping time to the progress of the profession and will be a beacon to other specialists of larger cities.

D. M. GRIFFITH.

FREE TYPHOID VACCINE.

The State Board of Health has a limited supply of Typhoid vaccine for free distribution and will send it to any physician who has immediate use for it. Address all communications for this vaccine to State Bacteriologist, Bowling Green.

PEACE SUNDAY.

Surgeon General Blue of the United States Public Health Service has proclaimed the twenty-third day of February as Universal Peace Sunday, and the clergy of all denominations is requested to devote the morning service to what has and is being done for the preservation of health and life in both the army and in civil life.

The JOURNAL requests members in every community to freely discuss the purposes of this service with their respective ministers, and furnish them with pertinent facts and litteratnre on the subject.

WHAT OTHERS THINK OF US.

Mr. E. W. Watson, the Manager of the Cooperative Medical Advertising Bureau of the American Medical Association has sent us the following complimentary notice. This is especially appreciated for the November issue was published during the height of the influenza epidemic and most of the printing staff was on the sick list:

Your November issue is the first of the State Journals to reach us. The copy we received came through the Membership Department; the five copies for the Bureau have not yet arrived.

We want to commend the November issue, especially regarding its fine appearance, its good printing, and particularly note the assistance you give advertisers at the bottom of pages 491 and 502, that "You may safely buy from our advertisers. All are guaranteed." And again, "Readers are protected, because only trustworthy products are advertised in this Journal."

We believe these squibs dropped in each

issue at the bottom of your reading columns do much to inspire confidence in the readers to buy from the advertising pages; and also inspire advertisers with the belief that your Journal is a good advertising medium, because their announcements are associated with other announcements that are reliable.

SCIENTIFIC EDITORIALS

PROSTITUTION, VENEREAL DISEASES AND PROPHYLAXIS IN THE ANCIENT AND MODERN WARS.

The relationship of Mars and Venus was known even during mythological times. It seems to us that this relationship is purely Psychological. Since the army is always made up of young men whose physical condition is almost perfect and who are willing to sacrifice their lives, it is expected that the greatest percentage of these men will take all kinds of chances. The admiration of the fairer sex for brass buttons, make military men susceptible to women's flirtations and enticements.

We notice that during the seige of Troy female slaves were appropriated by Grecian military commanders. Women followed the arm of Alexander of Macedonia during the war with Greece and Egypt. Female harp-and-flute players followed the army of the Midians and divided among the military officials. Xenophon tells us that Asiatic armies always carried women with them, the presence of which were supposed to make the men more courageous, but he sarcastically remarked that their aim and purpose was a different one. Most beautiful women lived at the female partition of the tent of the army commanders, and when the army moved, the women were conveyed in vehicles which often fell in the hands of the enemy. Athenaeus tells us that the Persian kings always took women with them when they went to war, and that Darius III had almost 400 women for himself, quite an asset; we would rather say a liability. Xerxes allowed his commanders to have women. The Jews, on the other hand, never tolerated women in their camps. In Rome, women were not allowed in the camps (Castra) and hence, we have the meaning castration, which comes from the word Castus which means chaste. Properius and Ovid have written beautiful poems on the occasion of women following the warriors. Scipio, of Africa, during the seige of Numay in 135 B. C., expelled 2,000 women from the soldiers' camps. The army of Carl the Great in the drive in Italy was accompanied by women. Gotfried, during the Crusades, organized the women in the army in military style and gave them arms, but also gave them permission to have regular relationship with the soldiers. King Ludwig, in the second Crusade had a concubine named Eleanor, who organized a regular company of women who were dressed as males and served the officers and were also obliged to cohabit with them.

The mention of venereal diseases in the armies was first noted at the end of the fifteenth century. A disease which undoubtedly must have been syphilis, was vaguely described by several writers who claimed that the disease was introduced after the discovery of America and later on spread in Portugal, Spain and Italy. It is claimed that the armies of Carl VIII introduced the disease in France and afterwards in many other places. Syphilis was then called the Neapolitan Disease (Male Neapolitano), Gallic (Morbe Gallico) and French Disease (Male Francese).

In the fight with venereal diseases, Napoleon the Great forbade the women to follow the armies during the marches and instituted strict supervision of prostitution in the towns occupied by soldiers. During the Indian campaign in 1886, Lord Roberts allowed houses of prostitution in the vicinity of the barracks but they were well regulated and periodically examined. Medical officers in the camps gave periodical talks on sexual hygien. The results were so satisfactory that he adhered to his ideas in regard to the regulations of houses of prostitution, notwithstanding that the English Parliament was opposed to such houses. During the Russo-Japanese war, the Japs tolerated houses of prostitution, but they had to be regularly examined by medical inspectors. Hence, the percentage of venereal diseases was far lower in the Japanese army than in the Russian. During the American war with the Philippines special well-regulated brothels were established for the soldiers. During the campaign in Tripoli, Bernueci, the head of the medical staff would not allow the Italian prostitutes to follow the soldiers, but established well-regulated houses of prostitution composed of native women. The percentage of venereal diseases was rather small. He particularly draws attention to the fact that, while the civilian population suffered very much from venereal diseases, the soldiers who were given prophylactic treatment suffered less. During the Franco-Prussian war, the percentage of venereal diseases among the German soldiers was very large due perhaps to the brutality and lack of decency of the German army. They were permitted to rape women in the occupied territories. No regu-

lated houses of prostitution were established on the Belgian frontier and French soil.

In the present conflict the medical department of every warring nation, recognized the fact that venereal diseases unfit soldiers for actual fight, have taken all measures and precautions. In each base hospital a department of venereal diseases was established and infected soldiers were taken great care of and isolated from the rest. Lectures on the prophylaxis and prevention of venereal diseases were given in each camp.

Stimulated by the war camp activities in the work of prophylaxis of venereal diseases, the Churchmen's Federation of Lonisville, an unscientific and ill organized body, has rather exceeded its authority in putting suspects in the local jail for treatment. We have watchde the doings of the Federation since it was established and it looks to us as ridiculous as it is vicious; it is as unlawful as it is is unjust; it is as unscientific as it is prejudiced. Of course, with such procedures and measures adapted, favoritism, bribery, blackmail are bound to follow. Forceful and unscientific measures of checking venereal diseases has always proved to be a failure. We do not deny that our boys in the camps had to be protected, but work done in the manner of the local Federation will never accomplish anything. Methods based on reliable statistics and extensive experience; methods worked out by scientific physicians and sanitarians will be far more practical than hysterical performances of a self-styled purity committee.

Looking over the methods of venereal prohylaxis as adapted by the medical department of different warring nations, the educational prophylaxis seems to be the most effective one. About five cardinal points are observed: (1) distribution of leaflets which acquainted the readers with the dangers of venery; (2) lectures given in the camps; (3) keeping a watchful eye on the recruits who attended to visit the questionable places; (4) regulation and creation of a sufficient sanitary force; and, (6) restriction and regulation of the sale of liquor.

Of all the leaflets that are being circulated among the soldiers of our allies and enemies, the one leaflet circulated in Milan, Italy seems to be the most striking one. It is brief and concise, but very forcefnl and telling in its appeal. It reads as follows: "Italian soldiers! if you really care about your health, about your family and your country you must read and read thoroughly the contents of this circular and remember its advice." The contents of the leaflet is about as follows: "Comrades! beware of venereal diseases:(1) Venereal diseases, particularly syphilis seriously undermines one's health. It is the duty of every civilian and soldier to preserve his health for the sake of his country. (2) Do not believe in the dangers of sexual abstinence. It is just the contrary; sexual abstinence preserves the powers of a man's organism and it is the snrest and only remedy to avoid venereal infection. Remember that venereal diseases can be transmitted to relations, friends and particularly to one's wife and children; you may be the cause of their having this misfortune. Don't lose their love, confidence and respect. You will feel ashamed in your family. What would you say of your son-in-law or brother-in-law who infected your daughter or your sister? Avoid street walkers who are trying to sell their sexual virtue; remember all of them are unclean and diseases and you are bound to get infected. Remember then, the mouth of lewd women are as dangerous as their sexual organs. Beware of kissing them. (5) In case of sexnal relations with such women, anoint the sexual organs with vaseline, after coition use hot water and soap and a sublimate solution. Retain the urine, so you can urinate right after coition. (6) Should you unfortunately contract a venereal disease, consult at once a reputable physician and follow his directions till a cnre is complete. Avoid advice of your friends and quacks. (7) Sexual diseases, particnlarly syphilis can be contracted without coition; it can be contracted by articles belonging to those snffering from the disease, such as: cigars, smoking-pipes, glasses, razors, napkins, etc. Avoid such patients, do not kiss them or even sh ke hands with them or fight with them. (8) In case you contract the disease, avoid sexual intercourse, wash your hands if your hands have touched the diseased organs, don't kiss your friends or your relatives and don't let them have your things. Surely if you are honest enough, you would not want to infect innocent persons. (9) Avoid alcoholic drinks and too much smoking. Tobacco and drink diminish the resistance and will prolong the cure. Liquor and tobacco are the greatest enemies to every man and they lead to association with bad women and to contracting venereal diseases. (10) Be chaste You must love one woman, your wife, the mother of your children. Avoid lewd women who will ruin you and your family. You must be honest husbands, good fathers, good citizens and good soldiers."

As regard to taking measures of checking the spread of venereal diseases in civil life, we are confronted with two questions: personal prophylaxis and public prophylaxis, of which we will speak in some future editorial.

M. L. Ravitch and S. A. Steinberg.

ORIGINAL ARTICLES

FOCAL INFECTION FROM A DENTAL STANDPOINT.*

By Raymond Grant, Louisville.

My principal object in presenting this paper on focal infection is to suggest the importance of a closer association than has hitherto existed between dentists and physicians in the diagnosis and treatment of disorders in which both are equally interested. For years I have numbered among my intimate personal friends many members of the medical profession, and have always cherished their friendship and wise counsel.

The foregoing suggestion is emphasized by Irons in a recent paper as follows: "The attitude of the physician in studying his patient should not be that of the prosecuting attorney bent on convicting the teeth of being the cause of all disease; nor should the dentist assume the brief of the defendant, ignoring the evidence of roentgenograms and systemic disease. Both must work in harmony, each believing in the sincerity and good-will of the other, observing professional courtesy and laboring to place the patient in the best physical condition possible."

The stride that has been set for the dental profession may be described as "double-quick time" with which it has been difficult for the ambitious to keep pace, and for those not ambitious impossible. This rapid stride began when William Hunter, in 1911, called attention of the medical world to the injurious effects upon the patient systematically which resulted from poorly constructed bridges, fillings and various other dental operations. He condemned the practice of leaving decayed roots in the mouth and placing plates over them, also the fastening of crowns and bridges to chronically abscessed teeth. His statements were based upon experience gained from clinical observation only.

Billings, Mayo, Janeway, Black, Price, Hartzell, Logan, Buckley and many other observers have contributed some exceedingly valuable information to the profession along the line of focal infections, and have repeatedly charged dentists with the seriousness of their responsibility. It is believed the representative men of the dental profession are meeting this responsibility and are now handling it in an intelligent, scientific and highly satisfactory way.

Rosenow has proven beyond the shadow of a doubt that focal infection in the mouth produced systemic diseases. He has taken pure cultures from foci of infection at the apices of the teeth and produced in rabbits and guinea pigs inflammation or disease showing similar secondary lesions as were noted in man. For example, if the appendix was the site of the secondary lesions as were noted in man, the culture from the teeth caused inflammation of the appendix in guinea pigs in about eighty-five per cent of cases. If the secondary lesion manifested itself in so-called "rheumatism," the culture from the tooth produced similar symptoms in the guinea pig.

According to Billings, systemic invasion from a local infectious focus may be through the blood or the lymph stream, the hematogenous route being undoubtedly the usual one; that practically always the regional lymph nodes are secondarily invaded from the primary local infection; that the lymph node infection may be subsequently a source of systemic infection by the hematogenous route. On the other hand, that the secondarily infected lymph nodes may be the place of destruction of the invaders.

The bacteria which cause apical inflammation belong to the pus-producing group, i.e., the streptococci and staphylococci. The streptococcus viridans is always found in focal infections at the apices of teeth. In making cultures from these areas, however, the tubercle bacillus, pneumococcus, typhoid bacillus, and in fact if there is an opening into the mouth from the infected area, any of the bacteria found in the mouth, may be shown in the culture.

It is a rather singular fact that while infections of the teeth are due to pyogenic microorganisms, the secondary lesions may be non-pyogenic. It must be that the pus-producing organisms in the primary focus do not produce the secondary lesions, or the morphology of the organisms is materially changed. If the pus-producing organism of the original focus is not changed, then the secondary manifestations are caused by non-pyogenic organisms which follow the pus-producer in the original focus. Billings claims that the result of hematogenous invasion with pathogenic bacteria may be modified by the specific type, the virulence of the bacteria and also by the character of the anatomic structure and specific function of the tissue involved. The variation in members of the streptococcus-pneumococcus group in culture characteristics, biological quality, in general and specific pathogenicity and degree of virulence has been noted by many clinical bacteriologists. It is known these variations may be brought about in the laboratory, by serial animal inoculations and by modifications of the character of the media and the oxygen pressure in bacterial cultures. Apparently like

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changes may occur in localized, confined infections, especially those due to the streptococcus-pneumococcus group. Here one may infer that the tissues involved in the focal infection act as a culture medium. The tissue mediums may be modified by variations in blood supply,—consequently in oxygen tension,—or unknown biochemic or other factors may alter the character of the confined infections agents. Apparently in no other way may be explained the sudden onset of rheumatism after acute or during chronic tonsillitis; of streptococcus viridians endocarditis associated with alveolar abscess, and many other systemic infections, undoubtedly etiologically related to an existing chronic, localized and confined infection. (Billings).

It has been shown (Rosenow, Billings, et al.) that the apparent absence of an acute focus of infection at the onset of systemic disease is not evidence that no focus exists; that latent chronic streptococcus infection of tonsillitis, pyorrhea alveolaris, sinusitis, etc., may suddenly acquire increased virulence and specific pathogenic affinity with varying degrees of focal tissue reaction. "This transmutation of type and pathogenicity certainly occurs in the focus of infection. The removal of tonsils and other sites of focal infection has been followed by complete recovery of prolonged, subacute and chronic types of arthritis and has unquestionably prevented recurrent attacks of rheumatic fever to which the susceptibility is increased by one or more attacks." (Billings.)

Saprophytic organisms which grow in fluids that have been separated from the living tissue may be the cause of secondary lesions. This is perhaps the chief reason why autogenous vaccines do not produce beneficial results in the treatment of mouth infections. It is worthy of note in addition that the peridental membrane at the end of the root is destroyed, that this medicine contains the osteoblasts and cementoblasts, and so long as the infection continues it is impossible for them to repair either the bone or the pericementum. "The natural anatomic structures of the teeth, dental alveoli, faucial tonsils, accessory nasal sinuses, seminal vesicles, prostate gland, Fallopian tubes, gall bladder and other structures favor confined infection. When infected, the resulting morbid anatomic changes in all the tissues named add to the physical conditions which promote focal infection. This is well illustrated in chronic alveolar abscess. The invasion of the dental alveoli with entameba buecalis, streptococci, and other micro-organisms results in destruction of the peridental membrane and other tissues. The roots of the teeth deprived of periosteum become more or less devitalized and with other focal dead tissues promote continued and aggravated confined infection." (Billings.)

It should be borne in mind that the tissues of the mouth offer probably more resistance to infection than any other structures of the body. The presence of a focus of infection in the mouth does not indicate that the individual is suffering from any systemic lesion; in fact the majority of individuals with an infective focus in the mouth are not suffering from systemic infection as the result of such local focus. On the other hand, it should be remembered that the secondary effects may develop so gradually that the patient is unable to recognize them. As a result the physician is not consulted until symptoms are well advanced, and if he is then able to afford relief by treatment the patient is slow indeed to respond. This fact alone demands the eradication of these foci of infection for protection of the health of the patient whether suffering or not. The opportunity for the dental profession to take a prominent place in the preservation of the general health of the public is undeniably here. "The existence of focal infection of the jaws in the form of chronic alveolar abscess, without the manifestation of much discomfort, is remarkable. The condition is often not discoverable by inspection and escapes the attention of the physician and the dentist. It is only when destructive lesions of the gums, tooth and alveolus make the condition visible that a diagnosis is usually made." (Billings.) Certain physicians have freely admitted that they must look to the dentist for methods of treatment which will destroy focal infection of the mouth and safeguard the individual from systemic invasion. "Deplorable as the loss of teeth may be, that misfortune is justified if it is necessary to obliterate the infectious focus which is a continued menace to the general health." (Billings.)

There seems to be no question that the mouth contains more possible foci of infection than all other tissues of the body combined, and the secondary effects of these foci present great therapeutic difficulties to the general practitioner of medicine. They are easily recognizable to the dentist who has kept abreast of the times by a thorough and careful mouth inspection in conjunction with roentgenoscopic examination. The results of treatment will depend upon a thorough understanding between physician and dentist and the education of the patient to the importance of the eradication of these infectious foci. The dentist should apply his treatment based upon careful diagnosis and a true conception of the danger to the individual who apparently may be in perfect health.

Hartzell and Henrici state that how great a site for bacteria the tooth surface is can only

be appreciated by the use of some method of staining bacterial masses in situ. If in the study of mouth infections, particularly those about the teeth, the observer will use a disclosing solution as recommended by Skinner freely applied to the tooth surface he will bring to view macroscopically masses of living bacteria which Kligler has shown to contain twenty, to six hundred million to the milligramme. These will be found on cultural and macroscopic examination to count among their numbers the streptococcus, the various staphylococci, the pneumococcus, the spirochæta macrodentium and microdentium generally, and always the fusiform bacillus. In addition are two protozoa, the entameba buccalis and the trichomonas intestinalis.

In this connection I cannot too emphatically condemn the practice of physicians who advise patients to have all their teeth removed, simply because it is recognized that some of them may have to be sacrificed. Where there is a focus of infection in any of the anterior teeth, it is possible to effect a cure in a great majority of instances either by the therapeutic action of drugs or by surgical procedures. I desire to recite the histories of four patients who recently came under my observation showing that the results obtained by treatment proved the correctness of the diagnosis:

(1). Mrs. C., of Henderson, Ky., about fifty years of age, had been confined to her bed with "rheumatism" for six weeks, part of the time in a helpless condition; she came into my office with the assistance of a nurse. The patient had a heavy green veil over her head, and upon its removal inspection revealed the right side of her face not swollen but intensely red with numerous erustations over it. The lesion looked not unlike malignant disease.

Upon investigation of the mouth it was easily seen that she had eight teeth which might be the site of foci of infection, and roentgenoscopic examination was positive in all eight. These teeth were promptly extracted, and within a week the skin of her face became normal in appearance and the general symptoms disappeared.

(2). Mrs. S., of Shelbyville, Ky., (patient of Dr. A. N. Pickett), about thirty-five years old, and as gray as one might expect an individual to be at sixty-five, had been in bed for two years. She had undergone an operation for appendicitis in Louisville and had gotten into a highly nervous state bordering on melancholia.

After careful investigation of the mouth, verified by roentgenoscopic examination, I recommended the extraction of ten teeth, the necessary bridge work to be performed at a later date. This patient completely recovered and is now leading a cheerful and useful life.

(3). A boy aged four years (patient of Drs. H. E. Tuley and J. H. Simpson), had been having elevation of temperature for several weeks which did not respond to the usual remedies. The tonsils were slightly reddened, but Dr. Simpson thought they were not sufficiently diseased to cause the general symptoms present.

Careful examination of the teeth showed no carious areas indicating pulp involvement. The tonsils were removed within the next few days, and the child's temperature promptly subsided to normal.

(4). Mrs. W., (patient of Drs. J. D. Trawick and A. O. Pfingst), aged about thirty-two years, had an attack of "rheumatism" which developed rather suddenly, and any muscular movement was very painful. Her tonsils had been "clipped" in early life. It was impossible for this patient to come to my office on account of her acute suffering, but by taking a few instruments to her home I was able to give a positive opinion that the teeth were not responsible for her trouble.

The tonsil stumps were removed and the patient's recovery was prompt.

It is admitted by the majority of observers that in many instances infectious foci in the mouth are the sources from which invading micro-organisms reach the circulating blood and produce lesions in joints, eyes, nerves and other body structures. It also seems true that such foci may remain latent so far as any marked effect on general health is concerned nevertheless, they are potential sources of trouble and should be eliminated. "The recognition of the important relation of alveolar abscess to systemic disease is a great step forward, and the period of extreme neglect of the past will never return. The readjustment in methods of diagnosis and in the establishment of a rational conservatism will come gradually as we learn to appreciate the interdependence of all organs of the body and the community of interest of the dental and medical professions." (Irons.)

Moorehead cites the histories of four hundred and ninety-eight patients with chronic mouth infections. Of this number three hundred and thirty-two had careful roentgen-ray mouth examinations. One thousand one hundred and thirty-two periapical infections were recorded; nine hundred and ninety-four of the teeth involved had been treated (root-canal fillings, etc.), and one hundred and thirty-eight teeth showed no evidence of root-canal treatment.

Eighty-nine per cent of the patients in this group showed definite roentgen-ray evidence of chronic alveolar abscess; one thousand

three hundred and forty-two teeth were involved in varying degrees of pyorrhea, the diagnosis being based largely on the roentgen-ray evidence of peridental membrane destruction; seventy-six per cent of the patients showed well-defined pyorrhea, many of them well-advanced with marked suppuration.

A second group of seventy patients with chronic infections (excluding arthritis) showed chronic alveolar abscess in seventy-four per cent.; the list included myositis, neuritis, goiter, asthma, nephritis, etc.; forty-nine per cent had pyorrhea.

A third group of one hundred and fifty patients (private records) showed chronic alveolar abscess in sixty-nine per cent. The following conclusions of Moorehead seem sufficiently important in this connection to warrant repetition:

(1) That the incidence of chronic mouth lesions in a group of over seven hundred analytical cases, showing percentages from sixty-nine to eighty-nine per cent, must be looked on as more or less serious evidence:

(2) That the overwhelming majority of chronic abscesses being associated with previously treated root-canals serves to emphasize the importance of root-canal technique:

(3) That both in diagnosis and in determining the extent of tissue lost, the roentgen-ray is paramount:

(4) That the involvement of the peridental membrane is the crux in deciding between conservative and radical treatment:

(5) That faulty root-canal technique, the careless use of arsenic as a devitalizing agent, and irritating drugs in the treatment of root-canals, are strong predisposing factors of chronic alveolar abscess:

(6) That in carefully selected cases conservative measures should be employed both in the treatment of chronic abscess and chronic suppurative pericementitis:

(7) That where root-canals have been disinfected and filled, portions of roots resected, etc., the process of repair should be "checked up" by roentgenograms made at frequent intervals:

(8) That regardless of whatever form of treatment may be employed, the removal of infection is imperative in all cases, whether the patient at the time may be well or ill.

The highest ideal in medicine and dentistry to-day is prophylaxis in its broadest sense. Every operation performed by the scientific dentist is with the idea of preventing future danger and discomfort to the patient.

To me it is a sad story that our best patients suffer the most from focal infections. It is the duty of the trained nurse, the doctor and the dentist to educate the laity and preach the doctrine that clean teeth do not decay In addition it is necessary for you to know that your patients take such care of their teeth and have them examined so frequently that caries will not encroach upon the pulp and thereby necessitate extraction.

The future generation must be protected against foci of infection in the mouth. The greatest protection will come from telling your patients the truth and the truth only regarding the future danger from focal infection.

In conclusion I desire to show twenty-five lantern slides and will give a brief explanation of each. These slides are divided into three classifications as follows:

1. Teeth which cannot be saved:
2. Teeth which can be saved by the therapeutic action of drugs:
3. Teeth which can be saved by surgical procedures.

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SMALLPOX IN COUNTRY DISTRICTS.*

By G. B. O'Roark, Grayson

To begin with, I would say, if you never had to deal with smallpox in a country district, you should not seek the opportunity, but give to the man that has, your sympathy bountifully.

Last May one year ago, I received a message from the town of Olive Hill, which to know is to more fully appreciate, to come and investigate a case which might possibly be smallpox.

I went the next day, and how any doctor who aspires to any medical knowledge what ever could think for a moment, it could be anything but smallpox, is beyond my comprehension. A plain case, as plain as the warts on a toad. I made some special inquiry, and I found that the disease had been in that neighborhood for some time, but as it, up to that time, had veen very mild, it had been pronounced chicken pox, and had in a measure been ignored. Consequently an innumerable number of exposures had been made. I placed the proper restrictions about that house and all others in that immediate neighborhood. It was next to impossible to find all the exposures, so I had to content myself as

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best I could, and wait further developments, which quickly followed.

It was not long till a perfect chain of letters beg n to pour in from Olive Hill and vicinity by the way of Bowling Green, stating that smallpox was raging and no relief from the doctors or the county health officers whatever.

Of course I sweat drops of blood as I was very much concerned about losing the honorable position of County Health Officer.

Box houses papered, and log houses daubed, closely situated, laborers who must work or starve, stinted county funds, were among the many things with which I had to contend.

I preached vaccination to but little effect. Most every one I mentioned it to, would say that they preferred the Cuban itch.

Conditions became more acute and Olive Hill stood a good chance to be cut off from the commercial world by a general quarantine by the State Health Officer. My good friend Shirley was sent as a special representative of the State Board of Health to investigate and make a final report. I met him in Olive Hill and he called a meeting at the town hall, and what he said to them was a plenty. Through him we obtained an order for inforced vaccination of Olive Hill and the adjoining school districts. The characteristic feature about Dr. Shirley is, that he makes one believe that he means it.

From the advent of Dr. Shirley, smallpox began to wane.

I am pleased to state that I have had no cases in the county since in March last.

Just a word about fumigation and disinfectants. We as health officers are admonished to see that the directions as laid down by the State Board of Health be followed to the letter. In rural districts it can't be done. In the first place county health officers are not paid a sufficient sum to justify them to devote the time necessary to attend the fumigations in person, and must necessarily depend on the families themselves to do it.

In the second place, the houses being mostly papered with heavy paper or daubed with clay, clothing scant, and furniture old, adds an additional difficulty to complete disinfection.

I had under my special supervision about ten families, I used sulphur for fumigation, and bichloride of mercury as a lotion both for washing down the patients and mantles and furniture. I never, to my knowledge, had a spread from any of those houses.

In one special instance, a family of eight, with the same clothes on they were wearing eight weeks before when they contracted the disease, a log house, one room and a "lean-to", with dirty beds, I was at a great loss how to proceed. That was six miles out in the country. I made one trip to see if they were ready to release. I came back home and related the case to the county authorities, and with their consent I bought a complete outfit of bedding for both beds, and two suits of clothing, both top and underwear, for all of the family.

I hired a wagon and had them hauled out. Then I prepared a tub of water with plenty of soap and new towels, a basin containing bichloride solution with instructions for each and every one to be washed and scrubbed thoroughly, after which, each to be rinsed with the solution. I had the man of the house carry everything loose from that house, and pile in one heap, these I saturated with kerosene, and applied the match. While the family was in one room bathing, I burnt sulphur in the other room; after they had been properly dressed, and that room aired, I fumigated the kitchen.

All in all it took me the better part of two days to complete the job. I never had any further spread from that house.

Now to show you the gratitude of that family, for the new bedding and new clothing, the man came to town as soon as released and endeavored to bring suit for damages for loss of household goods and clothing.

I wish to inquire of the profession, if they have found the vaccine virus to be particularly malignant in the past year, to what it formerly was. It seemed to me that I had more bad arms than I had ever known before, and the profession in my locality voice the same. We used Squibb's, Lilly's and Mulford's. I saw no material difference, except that we had a greater per cent of takes with Squibb's.

This paper was not intended for any enlightenment to the profession, other than what might be brought out from discussion.

I wish to add that Olive Hill and the two adjoining school districts stand right at 100 per cent. vaccinated, while that of Grayson is about 97 per cent.

DEMONSTRATION OF "NEW METHOD" OF VACCINATION.*

By Assistant Surgeon R. B. Norment, U. S. P. H. Service, Louisville.

I was much surprised to be asked to come again before some of you. I know some of you were present when this demonstration was made here some time ago before the meeting of the health officers of the State. It seems to me a small subject for demonstration over and over again, since it has been properly

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and correctly demonstrated and set forth in text books for years and years.

The method I used is not a new method; it is simply a modification of the old, old method. All of you probably know that in the theory of the inoculation of the human with virus of cowpox, the inoculation should be a superficial lymphatic inoculation. The operation is a lymphatic operation, and as in all lymphatic operations, the avenue of entrance does not have to be large at all. It needs to be just large enough to let the virus in. I have seen hundreds of vaccinations done by a great many different men, and I am sorry to say that in a great percentage of cases the vaccination is not only improperly done, but injuriously done. There is absolutely no excuse for some of the results that are obtained from vaccination. It is much easier to do it correctly, and it takes less time. You can vaccinate an individual absolutely properly in five or ten seconds and get an effective result. Gross scarification, the old method used for years by a great many people, is objectionable, for the reason that in gross scarification you produce an environment such as is favorable to the growth of anerobic organisms. There are a great many fallacies about the question of vaccination.

Just take the question of tetanus. It has been rather conclusively shown that tetanus is practically never produced by vaccination itself. It may be produced by secondary inoculation of a vaccinated area. People have been subjected to all sorts of fears as to what harm might be done by vaccination, what would be the result of vaccination as far as tetanus, tuberculosis and syphilis are concerned—and there are a great many big bugaboos concerning this question.

Take it all in all you may divide this procedure properly into two general classifications. One is the method of the application of virus and the other is the method of scarification, in the method of the application of the virus, by far the greater majority scarify before the application of the virus. I cannot tell you why. If you think about it a minute it is against common sense to scarify and put the virus on afterwards if you are trying to get into the lymphatics.

Another method, and better, is to place your virus on the arm and scarify through it.

The objection has been raised that you can not see through virus so applied. You can if you will make the film thin enough.

There has been a great deal of discussion concerning the method of application. For instance Kolmer's advice is to scarify and put your vaccine on afterward—but if you look up the advice of the Government they tell you to put the vaccine on and scarify through it. The important thing is the result that you get. The one that gives you the best result is the one to use if it is a legitimate measure.

There are three general methods of scarification. The first method is known as the linear incision, that is a single or a double linear scratch made so superficially, that does not draw blood. No vaccination should draw blood. You may get some secondary sanguinary exudate if you go a little too deep, but there is no excuse for blood clots on the arms of patients, as I have repeatedly seen.

The second method is the circular incision made with a von Pirquet chisel. After the virus has been applied, the chisel is held perpendicularly to the arm, and with a quick twisting movement the superficial layers of the skin are removed.

The other method is one in which the vaccine is placed on the patient's arm and with a needle held almost parallel to the arm, about six strokes are made obliquely just entering the superficial layers of the skin; these six strokes being made within a diameter of one-eighth inch. This method has the advantage that the vaccine can be immediately wiped off. You do not have to allow it to dry. You can wipe the vaccine off with a bit of sterile gauze, put the patient's sleeve down, and get no bad results. The weak point is that you do not get as large a percentage of takes.

There are various other methods; for instance, I have seen the "checkerboard" done in Louisville with scratches at least two inches long going both ways; a thing that of course should not be done.

Now there is another and a larger side of vaccination. This operation is very simple of course, but the fact that it is so simple has made the post-operative procedure in vaccination one of great carelessness; but there lies a very, very long story. There have been all sorts of treatments used in the past, following vaccination. The most common one is that of a group of men who say that a shield should promptly be placed over a vaccinated area, in order that foreign materials cannot be introduced into the vaccinated area. In the first place, that is not true. In my opinion the shield is absolutely the worst procedure you can use as the post-operative treatment of vaccination. It is so for very obvious reasons. In the first place instead of keeping out foreign matter, it is a catch-all. In the second place, the proper results of vaccination depend largely upon the thickness of the covering of the vesicle, and placing a shield over the vaccinated area macerates the vaccinated area and makes the vesicle less protected than it would otherwise be.

Then there is another method; the placing of sterile gauze over the vaccinated area after

operation. When I started to vaccinate children here in Louisville, I was criticised by very reputable physicians of Louisville, on my method of vaccination.

Some of them said that my vaccination should be an example to the physicians of Louisville. All I ask is for you to watch the results and you will see that this method is as good as any, and better than many other methods that have been tried. In the last year we have vaccinated approximately four thousand people, and out of that four thousand to my knowledge there have been only six infected arms, and only one of those was a badly infected arm.

The doctor who just read his paper brought up the question of secondary infection, and I think I might touch on it with profit right now. The advantage of this method of vaccination is, that you can vaccinate people anywhere. You can catch them on the street and vaccinate them under an arc light and let them go, putting on no dressing or anything, and get beautiful results.

I believe practically all the bad results in vaccination are due to one thing, and one thing alone, and that is improper care of the vaccinated area after the patient has been vaccinated. In every one of the cases that I know of that had bad arms there was a history of trauma, and if you will inquire closely into the secondary infection of vaccination, you will practically always find that there is a history of trauma.

Now to go back a minute to the question of superficial inoculation; that may have something to do with the likelihood of secondary infection, post-operative, in this way. In the first place, when you draw blood you make a clot, and of course that is an ideal place for bacteria to grow. Another thing is that it prevents the scratch from properly closing, which is the most important thing in vaccination.

Another big objection to the deeper method, which I forgot to mention, is that when you draw blood, you wash some of your vaccine out. The method that I use is a modification of the linear method. I use three superficial scratches one quarter of an inch long and about one thirty-second of an inch apart; three strokes through the droplet. Let the arm dry for ten minutes and that is all. I do not wash the arm with alcohol or any antiseptic unless macroscopically the arm needs something of that sort. If it is ordinarily clean, I never put on anything, and I do not think you can cite a class of cases where better results have been obtained than here.

The question has been discussed as to whether the single site incision, the treble, or the quadruple, is more effective in producing permanent immunity. That depends upon one or two things. It depends upon whether in cow-pox inoculation it is a local inflammatory condition that distributes the toxins over the body, or whether the virus itself is distributed through the body. The indications are that there is the distribution of the virus, on account of the permanence of the immunity. As you all know, in infections with distribution of toxins alone, the period of immunity is naturally relatively short—whereas in bacteriemias the period of immunity is relatively long. On the other hand in inoculating people with cow-pox, if you inoculate them in three or four places, they will develop their immunity very much more rapidly. In other words, if you had a patient who had been exposed to a case of smallpox two days ago, and you vaccinated him in four different places, he will probably not develop smallpox, because, if you vaccinate him in four different places instead of one you have just four times as much chance of getting a take before the smallpox develops as if you only used one site.

DISCUSSION:

J. G. Carpenter, Stanford: The law says that all the children attending public schools should be vaccinated or shall have a satisfactory scar of vaccination. I want to know if the State Board of Health is enforcing that law. We try to have proper cooperation in our county. If there is any ground on which the County Clerk or County Judge make their stand by the Health Officer, I would like to know what it is.

A. T. McCormack, Bowling Green: Kentucky is the one state in the Union that has a compulsory vaccination law. This law is enforced by the County Health Officer in the courts of his county. If the courts are worthless the law is very seldom enforced; if the courts are of any account and the doctor is as much account as Doctor Carpenter the law is enforced. In Jefferson, Henry, Franklin and Todd counties, the compulsory vaccination law has been enforced by the court from time to time. The Court of Appeals has decided the question over and over again. If the law is not enforced it is entirely the fault of the local authorities.

It is peculiarly gratifying to have with us another representative of the United States Public Health Service. We have had Dr. McMullen for a long time and we are glad to have another member of the same family. I think it is particularly important that this Association should know the great change that has come about recently in the Public Health Service. We now really have a United States Public Health Service! Dr. McMullen has been one all the time, but in most respects we have had just a shell. They have not had money or means to accomplish much. We now have a great public health ser-

vice, a great organization in Washington. The sort of thing that Dr. McMullen has been able to do on a small scale in a small section in public health work is now being done by the United States Government in a great way for the first time. It is particularly gratifying to have Dr. Norment, who is the first representative to appear before us after the greatly increased activity of the United States Public Health Service.

MILITARY SYMPOSIUM.*

The Association was called to order at 8 P. M., Wednesday, September 5, 1918, by the President, J. S. Lock.

This evening was devoted to a military symposium by the medical officers of Camp Zachary Taylor.

In the absence of Lieut--Col. W. L. Pyles Commanding Officer of the Camp, the President introduced Major Milton Board who said:

Mr. President, Ladies and Gentlemen:

I am very sorry indeed that Lieut.-Col. Pyles is not here this evening. I would especially like for the Kentucky doctors and the Kentucky citizens, including the mothers, sisters and brothers of those who are or will be at Camp Taylor as soldier boys, to meet this splendid man, this strong executive and tactful official who is in charge of the base hospital there. He came into our midst last December, and as a military executive, as superintendent of hospital, it has never been my pleasure to meet his equal. In his absence, as the senior officer, it becomes my duty automatically to take charge of the hospital, and in that capacity I want to invite every member of the Kentucky State Medical Association to visit the base hospital at Camp Taylor while they are here. I not only want to extend that invitation to you most cordially, but as your fellow member and a former president of this association, I want to try to impress upon you that it is your duty to come in order that you may go home to your clientele and to the mothers and sisters of the boys who are to be there, and carry back to them a message of what is being done there, and what may be done there, for the soldiers who will get sick in that camp. I shall speak very briefly in this capacity, because I believe I am to appear before you at a later time in the evening upon a subject in which I am engaged. I may say, however, that almost twenty-three thousand patients have been admitted to the base hospital since the first of September, 1917, or to be exactly correct, from the fifth of September when the first draft of the army began to arrive. The base hospital covers eighty-nine acres of ground. During that year, notwithstanding the large number admitted, there were only two hundred and nine deaths. The causes of these deaths will be taken up later by the chief of the medical service, Major Hamburger. The base hospital has a normal capacity of twenty-four hundred beds. This can be augmented by at least six hundred without special crowding by the use of tents and verandas, making a possible hospital of three thousand beds. At the present time we have about eighteen hundred in the hospital. There are on an average one hundred and fifty medical officers at the base hospital. There are on duty on an average of one hundred and fifty trained nurses from all parts of America, splendid young women, who give their services at meager salaries to the service of the country at this time. We have among the personnel of this hospital among the chiefs of service and their assistants the best medical talent in America. We have every laboratory facility the government can furnish as you will see when you visit the hospital, so that there is given to every soldier boy, regardless of color, regardless of former environments, regardless of the home he came from, as good medical and surgical attention as possible, such as a Rockefeller's money could not procure in a private hospital. (Applause.) That is no more than a duty which we owe to the soldiers. I hope sincerely you will visit this camp. It should not only be a pleasure but a duty for you to do so while you are here and see for yourselves what is being done at Camp Taylor. (Applause.)

The following program was arranged:

"The Incoming Draft," Maj. V. E. Miltenberger.

"Communicable Disease at Camp Zachary Taylor," Major W. W. Hamberger.

"Neuro-Psychiatry," by Major Milton Board.

At the conclusion of the program an interesting moving picture was shown on the reconstruction of the wounded soldiers.

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

THE INCOMING DRAFT.*

By Major Val E. Miltenberger,
Camp Surgeon, Camp Taylor.

The subject I have selected is probably the broadest and most comprehensive subject which interests our Government to-day, aside from the actual leading of our armies in action. We cannot too deeply appreciate the importance of weeding out the physical and mental misfit at the earliest possible time, if we are to rapidly train troops. We must prevent

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

the induction of the man who for physical or mental reasons is not going to make a soldier. Not only will this save the Government the cost of outfitting, feeding, paying and housing the man who will be rejected later, but it will save the line officer valuable moments spent in attempting to train the man whose mentality is too low to understand or doing the administrative work necessary to discharge the accepted physically deficient.

The drafted man is a heavy responsibility upon the United States. Formerly, our men were all volunteers. Our soldier of to-day has no choice in the matter, but is taken into the service without being consulted. The United States owes this man every consideration in the way of a careful physical examination and it is the charge of the Medical Corps to see that he gets it.

On the other hand, at this time every American owes our Government his very best and it is also the charge of the Medical Corps that no man physically and mentally qualified be turned away. The importance of the draft examination cannot be overestimated. It means much to the line commander to know his men are carefully chosen. It means more to the new soldier and his relatives at home to know that the examination is strict and standardized and impartial.

When possible, the quotas of new men are met at their home towns by officers, non-commissioned officers or Y. M. C. A. men who accompany them to the Camp. En route they are told of the Camp and the new life awaiting them. Instructions are given them with regard to what is expected of them and what they are to expect. They are told of the wonderful work done by the Y. M. C. A. and similar organizations. On arrival at Camp they are marched by the Receiving Officer, who accounts for them by quotas.

They next meet the Epidemiologist Board, where they are examined for infectious diseases. By taking out the occasional case of contagious disease before the man gets into a barracks building, we doubtless prevent hundreds of these cases, and any other acute conditions, needing early treatment, are immediately sent to the hospital. All cases of acute tonsillitis, are likewise sent to the hospital where early examinations for the formidable hemolytic streptococcus are made.

The quota is next conducted to its quarters when the men are fed and furnished bedding. The line officers now prepares the necessary forms and reports, ready for an appointment with the examining board. During this time each man takes a bath under direction of a N. C. O.

When called by the Board the men are marched to it. The examining building is a barracks building arranged with wire leads so that the man cannot get lost or out of line. He goes into a large dressing room where he strips and is directed to place his clothes in rows of neat piles. A few moments wait and the quota starts through the examination. In examining large numbers of men, it is very necessary to have the stream steady and so man each function that there will be a minimum of confusion, moving and noise. Recording is done by clerks. Rubber stamps are used wherever possible to save time and insure legibility.

Height, weight and chest measurements are first taken and recorded. Next the hernia examination is made. The men are next lined up and put through a series of movements by the orthopedist to find flat feet, stiff or swollen joints and old fractures. At this time especial care is given to varicose veins, varicocele, hydrocele, pediculi and venereal diseases; the scalp is examined for old injuries.

Ear, nose and throat are next examined. Next an ocular examination and the visual tests are given. A dental surgeon verifies the number and condition of teeth and the hearing test follows. At each of these stations the result is noted on the examination form.

Any disqualification up to this time is referred to a Board called the Review Board—the first of the four Boards having authority to reject. This Board, if it accepts the questionable condition, places the man back in line in the place from which he left it.

The man now comes before the Neuro-Psychiatry Board, where the reflexes are taken and a few standardized tests are made. This Board operates in two sections—one section examines every man passing, culling out suspicious cases for the other section, which gives each suspicious case special attention. Also, operating with this Board is a detail from the Psychological Board where the low mentality cases are referred. In cases where the mentality falls below eight years, the man is rejected. The Neuro-Psychiatry Board has authority to reject.

So far the examination has been conducted on the first floor of the building. The file now passes up-stairs where it meets the Cardio-Vascular Board. Here again we have found it to advantage to use an examining section and a consulting section. The latter have a small room with examining tables where the man can lie down. Free use is made of the sphygmomanometer.

The Tuberculosis Board is the last station of the physical examination. It also has a quiet room for more detailed examination. The Cardio-Vascular and Tubereulosis Board have authority to reject.

This completes the physical examination proper. However, any function of the examination board may take the man out of line and send him to the Base Hospital for X-ray or Laboratory information before accepting.

From the lung examination the man passes to the identification section, where finger print and scar records are made. Next the vaccination against smallpox, typhoid and the paratyphoids are given and record made. This is made last for the reason that by so doing, the man immediately becomes intent upon his getting downstairs and dressed and greatly reduces the number of men who faint. This fainting is interesting—it is entirely psychic. We frequently run for hours without an instance and one will induce several in a few moments. Litters and litter-men are handy to take them out of the line and look after them. Formerly, when this was done in a separate building, a pianist was detailed to play lively music and it had a wonderful effect, especially among the colored contingent. We sterilize needles by boiling in an electric sterilizer in racks; the arm is disinfected by iodine before and after the injection.

The man now passes downstairs, dresses and is conducted to his barracks. Time in the building averages one hour.

The commanding officer of the rejected man is given an official notification to that effect at the time the quota returns from the examining board. His discharge is made out at once, he is paid and given transportation home and every effort is made to speed his depart ure.

Now, beside accepting for full duty and rejecting, we have a third alternative; we may accept a man for limited service. An intelligent or trained man, though physically unable to perform front line service may be very valuable in some other capacity and thereby release for full duty some other man. Colored men, mentally between six and eight years, go to labor battalions; an extremely flat-footed individual may be an excellent stenographer. A man totally blind in one eye may be an excellent automobile repair man. These men are sent to the Development Battalion and are given a chance at some training. Illiterates are given duties where education is not required. Graduated drills and exercise in Development Battalions aim to develop the substandard man to the physically fit soldier.

As with the rejection, the boards notify the company commander immediately that the soldier is "fit for domestic service only."

The company commander now reports his quota ready for the Psychological Board. Appointment is made and the men marched to the Board. The psychological examination is of two main types. One for literates and the other for illiterates. At this board the mental acuity of both types is ascertained and graded to standardized scale. By means of these grades a company commander receiving 250 men—a company—can get an idea as to which men he can expect to qualify for his non-commissioned officers. He gets a most important line on every member of the new company without having to study the individual.

The quota after being marched back to its barracks is issued uniform and equipment. Instruction begins immediately. The second and third typhoid inoculations are made at intervals between seven and fourteen days. Each inoculation is followed by a period of one to two days of light duty only. During these two or three weeks, two important functions are accomplished.

First—Detention. The area becomes a detention camp. No outsiders are allowed in the area, nor are the new men allowed beyond its limits or in other barracks than their own within the area. They do not go to any place function in the Y. M. C. A., or K. of C. buildings, though they may go to outside movies and performances. Infectious diseases are watched for carefully and contacts sent to a quarantine area.

Second—Hookworm Examination. All men from Maryland, Virginia, West Virginia, Kentucky, Missouri, Texas and States south of them are examined for hookworm and other intestinal parasites and treated if found positive.

This completes the physical and mental examination of the drafted man. This examination is meant to be exhaustive. We must protect the individual by rejection or limited service if he is below normal. We must keep him to full duty if he is fit whether he wishes to serve or not. Dozens of queries come to camp asking whether some individual has not been sadly mistreated by having been accepted. Each one of these men is looked up and sent before a specialist—preferably not the same who examined him before and each one of these letters are answered. This policy is absolute and no case, however trivial, is overlooked. It has been the policy of the Camp Surgeon's office to handle these cases in this way so that the soldier's people at home know that their men are thoroughly and impartially examined. I have spent an aggragate of many hours answering the letters of anxious mothers, carefully feeling my way in wording them so as to give them all the information and encouragement the case afforded.

Incidentally, this is a field of real missionary work for the physician—when you get back home, assure the relatives of these men

that their welfare is the highest aim of the Medical Corps. Dissatisfied letters from home are the very worst enemy of the soldier and of the nation. Use your every influence on every occasion to persuade people not to write disheartening letters to their soldiers.

It has been hard in this paper, not to use statistics. Figures for rejections and domestic service are variable and largely depend on localities. A recent quota of colored men from Alabama showed a rejection rate of over ten per cent for low mentality alone. Each month we are fed men from some new locality and each locality presents its individual problems. This, I am given to understand, has been the experience at most Camps.

We call two thousand men a day's work. Often it is necessary to extend our hours for in the military service every day has twenty-four potential hours. Our heaviest day's examining at Camp Taylor was over thirty-one hundred men. On these occasions every effort is made to exchange examiners from one function to another or to replace them by fresh men to keep up the standard of the work.

COMMUNICABLE DISEASES AT CAMP ZACHARY TAYLOR.*

By Major W. W. Hamburger, Chief of Medical Service.

It is a great pleasure to be with you again after an absence of twelve months. I first addressed your association a year ago, after being at Camp Taylor only a short time, and I assure you it is a great pleasure to meet with you again. During the twelve months which have elapsed I think the most vivid and unusual experience among those that come to the members of the medical staff is that which pertains to my own service at the base hospital, where we have had epidemics of communicable diseases that parallel such epidemics as have taken place throughout the country, and it might be of interest to you for me to speak briefly of some of our experiences, particularly from the standpoint of the respiratory diseases, because it is those diseases that cause a high mortality rate among the boys.

On this chart (referring to chart) to which I desire to call your attention, there are several important points to speak of. In the first place, Major Board referred to twenty-two thousand patients having passed through the base hospital in these twelve months, averaging approximately a little less than two thousand patients a month. The exact number of admissions was 21,979. From the standpoint of the respiratory and communicable diseases, there have passed through this high number of total admissions, with a mortality of 209 cases, or a little less than one per cent., about .99 of one per cent. Of these 22,000 cases, 5,922 (approximately 6 per cent.) are classed as cases of communicable diseases. The mortality of these 6,000 cases was 153. We have various commissions, and propaganda for various diseases and various conditions among soldiers. For instance, the venereal disease problem was open to widespread recognition and public information. Of these 209 deaths which occurred at the base hospital, 163 or almost 80 per cent. were attributable to communicable diseases. So you see, from the standpoint of the high death rate, the extreme importance of a thorough appreciation and recognition of the seriousness of communicable diseases in army camps.

Analyzing more closely this mortality, we see that of these 163 communicable disease deaths, 137 or 18.9 per cent. died of pneumonia of one type or another. There were 204 cases of empyema, with 70 deaths, a mortality of 34.4 per cent., a disease which was unique throughout the country during the past winter. Of the total of 22,008 cases, there were 3,129 cases of measles, with a mortality of 52 from the complication of measles.

In contrast to the high mortality from communicable diseases, there are certain others which have a low mortality rate. In 2,163 cases of mumps, there were only 2 deaths. In 34 cases of meningitis, there were 11 deaths. The mortality from malaria and typhoid fever was comparatively insignificant. This situation regarding communicable diseases which existed rather universally throughout the country caused much thought and labor and analysis in Washington. From these analyses and statistics of cases and conditions existing throughout the country, Col. Vaughan and Col. Russell have shown the troops that are the healthiest are northern troops in southern camps. For instance, Camp Houston and Camp Logan in Texas, consisting of Chicago and Illinois troops, had a death rate lower than other camps in this country, which is about one-half the death rate in the same group of men remaining in Chicago, showing the benefits of the southern climate had probably to be attributed to this improved sick rate. Of southern troops in southern camps just the reverse was found to be true. For instance, for Houston in Texas and South Carolina the death rate of southern troops in southern camps was the reverse of what it was for northern troops in southern camps. The sick rate and low death rate ar

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

not to be compared with those of northern troops in southern camps. The explanation for this contrast in northern and southern troops centers itself on urban and rural populations. It has been shown that the population of the northern camps, particularly of the New England cities, is only 16 per cent. rural, and the balance urban. Most of the troops from northern settlements came from good sized towns, while southern cities with a thousand or more rural population covered 78 per cent. It has been shown definitely in these statistics throughout the country that troops from the rural districts are so-called non-immunes. Living apart in the country they have not had the diseases of children, particularly measles. They have no immune bodies in their blood, and when they get into camps they readily pick up the infections, and because of a lack of immune bodies and anti bodies in the blood these infections hit them hard. This susceptibility to pneumonia is true and was found and recognized in the Civil War and, according to Col. Vaughan and Col. Russell, has existed ever since. These facts probably apply closely to our situation here at Camp Taylor.

In the talk which was given last winter regarding pneumonias and empyemas, the statement was made, why do these boys show such poor resistance to these infections? The answer was given that these boys were virgin soil; they have never had any serious infection, such as chicken-pox, whooping cough, and mumps that the town children get. Furthermore, they go into camps where their environment mentally, physically and psychologically is changed. Their diet is changed; their hours of work and exercise are changed. Their methods of drill and hikes are all different from what they were put to in their home communities, and these things have tended to lower their vital resistance, and made them more susceptible to contagious diseases, such as this particular type of respiratory disease.

The lessons to be learned from this analysis are several: First of all is the fact that most of these infections occur during the first month or six weeks when the boys are coming into camp. If the new draft increments do not contract the diseases during the first month or two they will go through in good shape, and if they do go through six weeks or two months without disease, the disease will be relatively mild.

The various factors which tend to spread infection in the camps are being watched and analyzed from day to day and month to month and are coming closer and closer under control. There is considerable that can be done for the new boys and should be done for them before going into camp. For instance, as Major Miltenberger has pointed out, it should be the sacred duty of physicians going to home communities to talk over these matters with the parents of new draft boys and speak of things which might do them good from the s[illegible] point of the respiratory diseases. For instance, a man in a sedentary occupation should be encouraged to take exercise before going to camp. He should be encouraged to take long hikes and do other things which will harden him, so that when he comes into camp the accustomed change will not be so radical. Furthermore, his physician or parent or some one should instruct him in personal hygiene. If these boys knew something about personal hygiene, about caring for their teeth and mouth, washing their hands and cleaning their finger nails, the disposition of oral and nasal discharges, the danger from contact infection, of sneezing and coughing, would be very materially lessened. They should be taught the danger of using the same glass, the same handkerchief, the same towel, etc. They should be taught the fact that these diseases are transmitted only in two ways: First, by direct contact, from sneezing, spitting and coughing. Second, by indirect contact, through soiled fingers and hands, tobacco, cigarettes, wash cloths, drinking glasses, etc.

In a building where nine thousand troops were housed the distance between noses, side to side, was sixteen inches, and between noses from front to back, twenty-six inches. As you can imagine, nine thousand men all coughing at the same time and sneezing and spreading germs of one kind or another around makes a perfectly ideal incubating area for respiratory diseases.

Further instruction should be given in the camps as it is being given to boys at home before coming, in regard to the method of transmission of the common diseases, telling them that measles is transmitted only by secretions of the nose and throat; that pneumonia is a truly infectious disease, although it is not classed as transmissible like diphtheria.

In the past few days at the hospital, one of the nurses in the pneumonia ward has contracted a severe lobar pneumonia of the so-called type 2. We are morally certain that she contracted pneumonia from a pneumonia patient because the particular patient she was nursing had that type of pneumonia, and she is the only nurse at the present time at the hospital that has pneumonia. She is a girl from the country and came to the hospital only a few weeks ago and has contracted with certainty an active pneumonia. In the same way one may contract diphtheria or measles from the nursing of such a type of patient. These cases are well known to us in the hos-

pital and to camp surgeons. Isolation and segregation of measles and pneumonia and empyemas are maintained.

As was said a few moments ago, the campaign for instruction in venereal diseases and in other types of disease has been most widespread and most successful. It seems to me, that is shown by a more vigorous campaign for wider recognition, and a wider understanding of the transmission of communicable diseases is more urgent. While venereal disease will incapacitate the soldiers for duty to a great extent, it does not kill, and while shell shock and war neuroses incapacitate soldiers, they do not necessarily kill. The local work of rehabilitation of wounded soldiers is a social propaganda but, it seems to me, a knowledge of the respiratory diseases and the control of them and cutting down the death rate are a life saving problem that is urgent.

One other thing which might interest you is the question of disease among the overseas forces. I have been watching the weekly reports from the Surgeon-General's office, particularly as regards measles, and find the respiratory disease rate among the forces overseas is much lower at present than it is here. That is what we want. If the boys must have measles and pneumonia, it is better for them to have them at home than over there, because over there their nerves and physical endurance are needed more than in our hospital wards. Here in the camps, while measles is a necessity apparently to the rural boys and to the boys who have no antibodies in their blood, who are virgin soil, it is better to let them have measles after they have been in the camp two or three months than to let them have it after them come in because it may cause a higher mortality.

We had three distinct epidemics of measles, One in November and December, March and April, and in May, and increasing in extent.

The pneumonia and empyema mortality in November and December was quite high; in March and April it was higher. However, the mortality and disease incidence in the present epidemic was practically nil. Out of 260 cases of measles that came in, there have been no pneumonias and no deaths. It is this record of no pneumonias and no deaths in the summer months that is particularly gratifying, and, as I have said, if the boys must have the measles, let them have it after they have been in camp some time and in the summer months. (Applause.)

NEURO-PSYCHIATRY.*

By Major Milton Board,
Chief of the Neuro-Psychological Service,
Camp Taylor.

War is said to be the touchstone of insanity. This fact has certainly been demonstrated in the war that has now been going on for more than four years.

The classification of mental disease is difficult. A definition of insanity is almost impossible, but sanity may be defined as self-control plus the power to reason and to act in keeping with the age and environment of the people with whom we live. Society sets up a standard of sanity; that standard differs with the time in which we live and among the people with whom we live. There is a standard of sanity in the Army, and that standard may be defined as the mental capacity to appreciate and obey orders; or, if charged with offense, the mental capacity to know the difference between right and wrong, which is practically the same as civil law. In view of these standards of sanity, it is not surprising, it is most natural that there should be a wide difference of opinion touching the subject matter; hence a man may be held to be, and properly so, insane from the standpoint of an alienist, and yet be sound or sane from a legal standpoint or sane from a military standpoint.

The fact that the European countries were engaged in war for a number of years before the entrance of our government into this world-wide conflict was most fortunate from the standpoint of neuro-psychiatry, for one of the lesions which was impressed upon our government by those distinguished men who came here from France and England early in the war, was the importance of early recognition of mental and nervous trouble, and the elimination of the neurologically unfit. That had not been practiced in France and in England in the early history of the war, with the result that so far as the English Army was concerned, about twenty per cent. of all discharges from the service have been due to some mental or neurological trouble. When you remember that the war is from three to six thousand miles from the battle line; that these men are to be taken there in troopships; their provisions and munitions are to be furnished them there, it is of the utmost importance from a practical standpoint that they be mentally and neurologically fit to fight, otherwise a great deal of money is wasted in attempting to take care of the men who are totally unfit.

With this end in view the Surgeon-Gen-

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eral with his usual foresight in the beginning of the war sent to New York and selected one of the most distinguished neurologists in America, now Colonel Pierce Bailey, and brought him at once to Washington and put in his hands and in the hands of the National Committee for Mental Hygiene practically the entire neuro-psychiatric problem. He was empowered with the authority and right to organize the neurologists and psychiatrists of America, to correlate them, and when the time came they were enlisted under the auspices of this body.

When the soldiers first began to come into camp larger discretion was given than is now given in the matter of discharge. In those days there were no such things as development batallions; a soldier was either fit to fight or unfit to fight. He was either rejected from the service or retained in the service for full duty. The result of that was the percentage of discharges averaged higher, running up last fall to about one per cent. at this camp of all those examined. That has changed to a very considerable degree now. I might call your attention to a few types of those found mentally and neurologically unfit upon their arrival at the camp. The first in order numerically are the cases of defective mental development. There are three types of these —the imbecile, and we do not find many of those who pass the local boards and come into the camp. The second group we know as the morons. Of these we find quite a large number. Third, the border-liner, the high grade imbecile, of whom there are quite a few. The imbeciles are, of course, discharged at once. Practically all the moron type are discharged at once. Of the border-liners, as Major Miltenberger has told you, we have many among the colored troops, a great many of those who seem to be border-liners, and because of their symptoms and their illiteracy, are kept for domestic service.

Major Miltenberger has indicated to you one of the methods by which these people are detected. A number of psychologists are being utilized all over the country; a special psychological department is maintained at Washington, with Major Yerkes, formerly of Harvard University, at the head. They are busy in this camp as they are busy in other camps, and they are a valuable aid in tabulating these defective types.

The second group in point of number of discharges are the epileptics. It would be surprising to you to see what a large number of epileptics come into the camp and who are discharged on account of their epilepsy. It is perfectly natural that that would be true. The local boards do not know of the epileptics in their county; they give the government the benefit of a doubt. It is not often that there are sufficient stigmata to determine that a man is an epileptic even so far as we are concerned when he is referred to the ward. We have one rule, namely, that the production must be of a type that is truly epileptic and not of the hystero-epileptic type which I will speak of later.

A third group are the actual psychoses, not large in number. In this connection I want to consider the neuroses and the constitutional psychopathics together. The actual psychoses present themselves in two distinct types in the main, the maniac-depressive group, the active group, the acute manias, the acute melancholias, which manifest themselves in civil practice, and that large group so peculiar to people between fourteen or fifteen and thirty-one years of age, which we know as dementia precox. They constitute the two great groups of psychoses with which we have to deal in the Army. We have a few paretics, but not many. The number of paretics will be much augmented when the draft of the Army is made up of men taken from civil life who have reached the age of forty-five. We will see a correspondingly large number of epileptics at that time. We will also see naturally more organic mental disease.

Another class with which we have to contend, and which accounts for a certain number of discharges, are the chronic alcoholics. Delirium tremens is the cause of a good many fatalities. Several men coming in are heavy drinkers, and when they come into the army and their supply of liquor is shut off abruptly, within a few days delirium tremens ensues, we have had a large number of patients. A comparatively small number of chronic alcoholics are discharged from the service; the majority of them are held to be fit for service, and after convalescence from the acute condition, they are returned to full duty, sometimes to domestic service, each case being a law unto itself.

A different problem, and a much more serious one, is morphinism, the drug habitue. Up to a few months ago we were in the habit of discharging from the service the chronic morphinist. The Surgeon-General's Office has recently made a different ruling, and we are not discharging men for morphinism *per se*; I do not mean we may not discharge men for physical reasons, who are morphinists, but we are not discharging them for drug using by itself. Several reasons have been advanced for this. One reason is that it is alleged that in certain places, like New York, there was a concerted action on the part of certain individuals in connection with disreputable physicians to make morphinists of men who were

to be drafted into the service for the purpose of escaping military duty, and they showed up with their arms and legs full of needle punctures which had only been made within the last few weeks to escape the draft. At any rate, be that as it may, the effect of keeping morphinists in the army will be a most excellent thing for the civil communities. It remains to be seen whether or not it will be a good thing for the army. I do not know what the demoralizing effects of putting a chronic morphinist in the army will have. It is a question which will have to be worked out. So far as I am personally concerned, I view it with some apprehension. My feeling, as many of you know, is rather pessimistic about the cure of morphinism, and I have expressed myself to that effect before most of the county medical societies in Kentucky. My feeling for the individual morphinist is the greatest good to the greatest number by utterly disregarding the rights (if he has any right) of the individual morphinist. Whether their drafting will be for the good of the army or not, it will be an excellent thing for the local communities.

The question has been asked me very frequently, do you have insanity in the army? Are these people sent here after they are insane? They are not. Right over near the battlefront institutions are established for the care and treatment of the acute psychoses. In addition to the government asylum at St. Elizabeth in Lexington, the government has recently added one at Des Moines, Iowa, and if this system goes on, any state hospital may be designated by the Secretary of War as a government hospital in this time of emergency. Furthermore, the government has already established and will establish a large number of neurological hospitals. We are now beginning to send from this camp certain neurological cases to Plattsburg Barracks, New York. As the days of reconstruction come and men are returned from the battlefields of Europe suffering from "shell shock," naturally a large number of neurological hospitals will have to be established. The same thing will be done and is being already done in England, France and Italy. In cases where returned soldiers are to be quartered neurological hospitals will be established. These men were not insane when they entered the Army; neither did they present any marked neurological manifestations. Neither is there any difference between the neurological manifestations seen at the front. The condition comes about in this way: In civil life, when any individual is confronted with a situation extremely unpleasant, extremely disagreeable, he sidesteps, he gets away from it, and in civil life he can continue that always and may not attract much attention upon the part of his neighbors and his friends. If he does not fit into the economy of things, he simply gets somewhere for a time. He is a little abnormal. Sometimes he is referred to as a goat or stick. Sometimes he is spoken of as a crank or is regarded as a little erratic. He is regarded as neurotic perhaps, but he goes about in civil life without a mental breakdown, without an actual neurological breakdown, and without attracting any unusual or undue attention. But when the neurotic individual (and the army draft takes them all) is put into the iron mould, and there is but one in the military service, his nature does not admit of his adjusting himself immediately or not at all to the environments and surroundings of the military service. What is the result? An explosion occurs. The subconscious steps in, and some of these neurological individuals become insane. A potential dementia praecox, who in civil life would not have manifested this condition for a number of years perhaps, never might have come on, at the age of forty or forty-five the condition manifests itself as a true paranoia. If the individual has not lived in strict conformity with mental hygiene, under these unusual conditions for which he is neurologically unfit and totally unprepared personally, he breaks down and dementia praecox or some other form of mental trouble manifests itself. If that does not occur, he drops into the psycho-neurotic group, and we have at Camp Taylor a most unusual set of neurological cases, termed functional paralyses. A man turns up with a complete hemiplegia without any pathology whatsoever, or he has a paralyzed arm, or he has typical wrist drop, or he has hysterical aphonia. All these manifestations we have at the camps, and it is these cases at the front that have been designated as "shell shock", and these same conditions are to be observed and treated in the neurological hospitals in France and England and Italy, and we will soon have such men for treatment in this country. We term them in camps "anticipatory shell shock". I have spoken of them as the line of least resistance malingerers. They are not intentional malingerers. They have a certain condition at times which is a common symptom—a condition that we know as an "intention tremor," most pitiful. Not long ago a man of Jewish origin, an intelligent fellow, came over to Major Hamburger's office in company with a friend and asked to be transferred to the base hospital as a part of the personnel. He felt he was not fit for the ordinary life of a soldier. He was bright and capable, but he failed to get transferred. He went back and brooded over that. He thought of his wife and home; he thought perhaps of

going into the front line trenches. There is no telling what came into the mind of that neurotic individual. He compensated how? By an intention tremor, by paralysis of the left leg and by a set of neurological symptoms, purely functional, which are most pitiful to look at. That is "shell shock." That is what "shell shock" means and is.

Now, the group of psycho-neuroses I have spoken of are hysterias. In the same connection I might mention the neurasthenias and psychasthenias, the latter belonging to a certain group of patients with more culture and more refinement. In the same group are placed pronounced stammerers, and stammering, if pronounced, is a cause for rejection. In the same group are included bed wetters—enuresis. Of these we have quite a few. We have a large number who are intentional malingerers.

We have another group that are somewhat akin to those I have discussed. We define them as constitutional psychopaths. I rather like the expression. In that group we include the criminal types, and we have many. I examined a man to-day who had served time in three different penitentiaries, although he is less than thirty-one years of age. He is a morphinist, he smokes opium, and has taken cocaine and heroin by snufflation and hypodermically. He is an undesirable citizen in the army or out. He belongs to the type known as criminalism.

We have another type which we designate as emotional instability, which expression is about all that is necessary to indicate. We have the paronoiac personality, and although they are not far enough advanced to be termed paranoiacs, they are potentially paranoiacs. They are the types which we must separate from the true soldier body and either dismiss them from the service or retain them for domestic service so that the government will not have to take them abroad and send the amount of money that would be necessary to do that and feed them after they get over there.

These, in brief, are some of the types of soldiers that the neuro-psychiatric department have to pass on. Many of them are properly cared for and are returned to duty. A large number we have discharged from the service a large number we have transferred to the different insane asylums or neurological institutes, and functioning in that way at the base hospital here and elsewhere, is the neuro-psychiatric department maintained.

SOME PHASES OF THE RECENT INFLUENZA EPIDEMIC.*

By Walter F. Boggess, Louisville.

In view of certain unusual features noted in the influence epidemic through which we have just passed, I thought a general discussion of the subject might be of interest not only to the internist but also to some of the specialists.

This epidemic has furnished us illustrations of new types of cases, both clinically and pathologically; and doubtless we have all encountered types of pulmonary, cerebral and toxemic conditions such as we have never before witnesssed. So far as the pulmonary picture is concerned, I am sure we have seen pathology different from anything we have ever before seen in this community. In previous epidemics no such pathology was observed.

I think the types and classification of cases suggested by Major Fox, of Camp Zachary Taylor, may be accepted as correct in civilian practice, viz: (1) mild, (2) moderately severe, (3) severe, and (4) very severe. While the city statistics show only about six thousand civilian cases reported, I believe there have been nearer one hundred thousand cases in the city of Louisville during the recent epidemic. And while the epidemic has now about subsided, there is still considerable influenza in the city and new cases are seen every day, but they are principally of the mild or moderate type.

The infection has been very peculiar in some respects. At the Kentucky Military Institute out of one hundred and ninety-seven students, one hundred and twenty-seven cases of influenza developed within forty-eight hours, and sixty cases within three hours. The infection has been aptly described as a "very volative" proposition, like a huge wave or barrage of smoke, which carried everything quickly before it, and then gradually disappeared. In other parts of the state where the severe type is now prevalent, they are on the crest of the wave; and in Louisville we are now at the bottom of the wave.

The incubation period seems to be very short, probably between two and four days. In isolated places like the K. M. I. where sixty cases developed within three hours, and one hundred and twenty-seven within forty-eight hours, the infection was very virulent and evidently owed its origin to a single individual, as it occurred at a certain specific time. It can usually be determined within the first twenty-four to forty-eight hours to which type the case belongs. I have not seen a single case

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which began as a mild infection and then became severe within forty-eight hours. The severe cases have been so from the beginning, unless the attack was so mild that the patient did not go to bed and failed to take proper care of himself, although the temperature was 101 degrees to 102 degrees F. In such cases the disease oftentimes assumed the severe type after a few days. That has been my observation in both sporadic and epidemic influenza cases. In the mild cases if the patient goes to bed and takes proper care of himself during the first forty-eight to seventy-two hours, recovery is the rule; otherwise the severe type supervenes and the condition may become extremely serious.

In the severe type of cases one feature which particularly caused me to be alarmed when I saw the first few of them, because I had never before seen anything like it, was the type with high fever and slow pulse; the patient was not much depressed, but early began to expectorate a large quantity of peculiar thin, bloody mucus. I have seen many patients who expectorated at least a quart of such mucus in a day. That type has been classified as hemorrhagic bronchitis. I have seen dozens of them, and while there was some mortality among the first few cases, I believe of the pulmonary types they are the most favorable and recovery is the rule.

Another pulmonary type differing in its pathology from anything I had ever seen was a diffuse catarrhal lobular pneumonia not necessarily accompanied with high fever. The lungs filled with mucus and the patient became quite ill, but the majority recovered.

In the very severe type there was also a diffuse catarrhal pneumonia particularly of the posterior lobes with high temperature, slow pulse, cerebral and nervous symptoms, etc. The patient very early became cyanotic in appearance, although it was not a true cyanosis, the nails, tongue and lips were blue, with plenty of air in the lungs apparently, the blueness not disappearing one iota after the administration of oxygen in any quantity. The patient early showed mental depression, becoming unconscious, and dying within three to four days. That was the very severe type. In my opinion the blue appearance in these cases is known as methemoglobinemia. I think in every case one of these cases of infection was due to the streptococcus hemolyticus.

The deaths in the majority of cases were not cardiac nor pulmonary but they were central. There was a terrific toxemia and death was due to depression of the central nervous system and the destruction of the blood.

So far as could be determined from my experience in the recent epidemic, in the severe cases the infection was due to three types of bacteria, viz., (1) the bacillus influenza, (2) a very virulent strain of pneumonia, and (3) the streptococcus. I suppose in the severer cases the streptococcus hemolyticus was also present. In some cases the influence of the bacillus influenza was probably negligible simply acting as the forerunner or organism which prepared the patient for infection by the pneumococcus and streptococcus. Where we had influenzal infection alone only the mild type developed such as was noted in former years. In the epidemics of 1890 and 1903, while the patients did not die from influenzal infection, the bacillus influenzae was the exciting organism which rendered the soil favorable for the pneumococcus and streptococcus.

As to the complications: I have been much surprised in my civilian practice at the absence of infectious nephritis. I examined the urine in a large number of the patients with severe types of influenza, and in not a single one was there found any evidence of infectious nephritis such as ordinarily seen in virulent infections. I do not know how to explain the absence of renal complications.

The absence of middle ear complications was also noteworthy. In the majority of influenzal infections I have previously seen there have been many more cases of middle ear complications than in the recent epidemic; in fact, I have seen very few of them. This may be accounted for by the fact that patients did not have the violent attacks of sneezing, coryza with nasal discharge, etc, noted in former epidemics. The infection was unquestionably one of the post-nasal space.

The early clinical diagnosis is based upon three factors: (1) fever, (2) intense myalgia and particularly backache, and (3) the peculiar appearance of the throat. Examination of the throat shows exactly the same picture in every case. The fauces and faucial pillars are much reddened, the uvula is slightly edematous, and the entire throat is covered with a "dirty" looking mucus; I know of no other way to describe the picture. The diagnosis can be positively made on the presence of fever, the myalgic pains, and the peculiar appearance of the throat. Of course in the later stages other symptoms develop. I visited Camp Taylor many times during the height of the epidemic, and incidentally asked Dr. Alexander Johnson upon what he based the clinical diagnosis. He said upon two factors, (1) fever, and (2) the peculiar appearance of the patient's throat, and I believe he is about right.

Another surprising feature to me was the infrequency of empyema in private practice. During the severe epidemic of pneumonia at Camp Taylor last winter,—and we also saw many cases in civilian practice,—pleurisy de-

veloped within twenty-four to forty-eight hours and shortly afterward a definite empyema appeared followed by streptococcal metastasis throughout the body with pus everywhere. In only two instances during the recent epidemic have I seen what I thought was an empyema. One patient became almost moribund, and I remarked to my assistant "we have fought to the last ditch and cannot fight any longer." The next morning, however, the patient showed decided improvement although fever continued for three weeks and the chest was apparently filled with fluid to the level of the fourth rib on the right side. We introduced a Ricord needle and withdrew a syringe-full of pure pus. The patient was then sent to the hospital where rib resection was performed and instead of an empyema there was found a massive abscess of the lower lobe of the right lung containing two pints of pus. The visceral layer of the pleura was adherent to the parietal layer and very much thickened; half an inch of inflammatory material and another inch of lung tissue had to be incised before the abscess could be reached.

In my private practice I have seen only three cases of pulmonary abscess. In one the lower lobe of the right lung was gangrenous. Another patient was operated upon by the late Dr. Turner Anderson and is still living, That was twenty-five years ago. In all three cases the pathology was thought to be empyema.

Another thing which impressed me in the recent epidemic was that the disease mainly affected individuals from fifteen to thirty-five years of age. Not many cases were seen in older persons excepting those who had nursed younger members of the family who had influenza. I have two such cases under observation now, a man and his wife, the former being seventy years old, and the latter sixty. They are the only elderly people I have seen with influenza, the majority of them being between fifteen and thirty-five. The fact was noteworthy that while some children had the infection it was much milder in type than among older persons, and many younger children escaped altogether. I have not seen a seriously sick child in any of my influenza families.

As to the management: It is regretfully admitted that there is no specific treatment. I have used vaccine as a prophylactic in several instances. Sometimes where the initial symptoms indicated a severe type of infection I gave the newer vaccine supposed to be prepared from strains of bacteria obtained at the various camps, and in a number of cases thought the disease was changed from a severe to a mild type; but whether this is true or not is conjectural. I do not believe the prophylactic use of vaccine is as effective in influenza as in typhoid fever. I have given vaccine because I felt there might be something in it, as we know the introduction into the body of any foreign protein will increase the resisting power against other types of bacteria; I used it also because of the popular demand.

I firmly believe by the use of a 12½ per cent solution of argyrol in the nose night and morning, or a mild antiseptic ointment, such as boric acid, camphor and vaseline, the soil may be so changed that the bacteria will not find a suitable resting place; that is, the anterior and posterior nares may be kept fairly free from the bacterial flora always present and which may be a source of danger in these cases. In my opinion the use of argyrol in the nose is an absolute protection against the infection. During the entire epidemic I have used it personally, filling each nostril morning and night with a medicine dropper. In every family I attended argyrol was similarly employed as a prophylactic, and none of those who used it afterward became infected.

Rest in bed is important, with abundant fresh air, sunshine, and plenty of liquids to drink; the fruit acids are particularly serviceable, lemons, oranges, limes; keep the primae viae open and relieve the pain with aspirin. Oftentimes a little morphine will markedly change the clinical picture. I have often given small quantities of morphine with rather full doses of belladonna. I think atropine is one of the best remedies we have in these cases. Give the patient a light diet if he wants it: laxatives should be given in every case as required. When asked what the patient shall be allowed to eat, I have been in the habit of replying "anything within reason that he wants, nothing that he does not want and does not relish."

In hemorrhagic bronchitis,—and I think that is the correct term to represent the pathology,—adrenalin seems to do some good. In the severer types I give pituitrin freely and think I have saved some lives by its use. In extremely toxic patients suffering from shock, our surgical friends have undoubtedly saved life by the use of full doses of pituitrin. In severe types of influenza where the patients suffer from toxic shock with marked depression of the central nervous system from the toxemia, why should not the internist use pituitrin to overcome the toxic depression just as the surgeon does to overcome the traumatic depression? In all severe cases of influenza there is a marked acidosis and alkalies are indicated. I have administered alkalies freely and think some good has been thus accomplished.

The foregoing merely represents some of

my personal views concerning certain phases of the recent influenza epidemic.

DISCUSSION:

B. C. Frazier: I have been much interested in several of the points mentioned by Dr. Boggess in his address. In the recent epidemic the short period of incubation has been very unusual. In most instances the disease developed within seventy-two hours after exposure; in some cases earlier, in very few later. I recall three mothers who visited their sons at the Kentucky Military Institute on Sunday; on Monday night they were seriously ill of influenza. In other families the fathers and mothers whose children had influenza also developed the disease within seventy-two hours. If the infection did not develop before the fourth day, there was little likelihood of those exposed having the disease. These points have been especially noticeable in my experience.

My observations have been unlike those of Dr. Boggess in one respect: I have seen a number of cases which were mild in the beginning and later became severe. The majority of them, however, followed the course he has outlined. Hemorrhagic bronchitis, lobular pneumonia, expectoration of blood, epistaxis, etc., have been quite constant. I saw many patients who had severe epistaxis although they had little bronchitis and not very much cough. Another feature that impressed me was that some cases had high fever and a great amount of cough with apparently little demonstrable pathology.

I see few patients with influenza now compared with three or four weeks ago. A man had worked on Monday but felt ill, and by Tuesday night he was seriously sick with influenza. Thursday night I was called to see his wife who was then as ill as he had been forty-eight hours previously. By this time the man was almost well.

Another feature that has seemed to be quite constant has been myalgia with severe headache. I have had five or six women say to me: "Doctor, I have never had such a backache since I had my last baby."

I have observed no routine method of treatment. During the epidemic I have prescribed Dover's powder more extensively than ever before, and believe it has given the most of my patients greater relief than anything else.

The types of pneumonia I have seen following influenza have been lobular and true lobar. Many patients had simple bronchitis, and others hemorrhagic bronchitis. I recall one case of more than ordinary interest. I saw a young man on the third day of his illness and could detect no signs of pneumonia. Dr. J. R. Morrison saw the patient a few days afterward and made the diagnosis of pneumonia. I visited him again late that evening and found he then had pneumonia involving the lober lobe of the left lung. The disease pursued the ordinary course ending in typical crisis on the seventh day. In forty-eight hours the patient developed pneumonia on the opposite side which terminated in crises the eighth day. He was free from fever for two days, then pneumonia recurred in the middle lobe of the left side. Thus the patient had three distinct attacks of pneumonia. He subsequently had a pleural effusion which was eventually absorbed.

I saw quite a number of cases of pleurisy where nature took care of the effusion; in only one was a true empyema noted. That was a patient in the Louisville Public Hospital; a man had pneumonia with effusion which became purulent; Dr. W. C. Dugan resected a rib and the patient is recovering.

H. E. Tuley: Unfortunately my duties at the Louisville Public Hospital during the recent influenza epidemic were largely administrative, and I was therefore unable to personally observe a great many of the patients admitted. However there were some very serious problems with which we had to deal.

On September 25th the first patient with influenza was admitted. We have an isolation capacity of thirty, by October 10th one hundred and seventy-two cases had been admitted, and on October 11th forty-four cases were received. On October 15th we had one hundred and seventy-five influenza patients, so the proposition was a very serious one for us to handle. In addition to that twenty-seven of the nurses and five of the doctors were sick, but fortunately none of these died.

The mortality at the hospital can hardly be taken as a true index of the general mortality in the city, because we received many of the terminal cases. I was interested in examining the case cards to-day to see the short time the larger number of the patients were in the hospital,—one day, two days, four days, etc.,—the majority of the deaths occurring within twenty-four hours after admission.

One phase which has not been mentioned to-night was very noticeable at the hospital, i.e., the fatality which invariably followed pregnancy and abortion in influenza patients. Every pregnant woman admitted with influenza either aborted or died during labor; and every one that aborted died; all those who had aborted before being admitted also died; several women died before they were delivered.

Only three cases of influenza developed in the hospital wards, which I think was quite an unusual occurrence. There were approximately one hundred and seventy-five cases of influenza there all the time, and only three cases developed in the house. These were surgical cases, and while they were diagnosed as influenza, I am not quite sure that two of them were, although both died from pneumonia. There are now about sev-

enty cases of influenza in the hospital; we are receiving from four to six per day.

I was fortunate in being able to attend the meeting of the Medical Staff held at Camp Taylor after the third week of the epidemic. The papers read in the symposium on influenza were very interesting, the subject being discussed from every angle. There were many features in the symposium which impressed me, and some of them will be briefly mentioned. The type of the disease varied from one week to the next. During the first week the type was hemorrhagic; in fact, Major Fox stated that at autopsy on the first patient who died there was not found enough pathology to have killed the man, or, as he expressed it, "hardly enough pneumonia to fill a teacup," and yet there were tremendous hemorrhages everywhere,—into the bronchi, the adrenals, the intestine, and even some free blood in the pleural cavity. The second week the type changed; the patient began to show exudation of serum into the pleura, the various sinuses, the peritoneal cavity, and the pericardium. In the third week the type again changed and the exudate became purulent.

The bacteriology also changed from time to time. When the sputum examinations were made early, the Pfeiffer bacillus was rarely found; but blood cultures from the lungs, the bronchi, and particularly from the sinuses showed an abundance of the Pfeiffer bacillus. In the second week the streptococci and pneumococci predominated, and in the third week there was a preponderance of the streptococcus with occasional hemolyticus type.

Another interesting feature not mentioned tonight is the incidence of influenza among the negroes, the proportion being very small. Of five hundred and fifty-six admissions to the hospital thus far there have been only seventy negroes. The proportion of children was also small in this series, viz.: only twenty-five cases under ten years of age. I think the actual number of children with influenza was even less, because some whole families were admitted, and some of them merely had coryza.

One of the most pathetic incidences that happened during the epidemic was when an entire family consisting of father, mother and seven children were brought to the hospital; the mother and two children died. In another instance the father and mother were taken to the emergency hospital, and three children were sent to us. The mother died, and one of the children brought to us also died. They had about sixty cases in the emergency hospital under the care of Drs. Gray, Bruce and Norment, with an efficient corps of nurses.

In regard to the diet of influenza patients: It was impressed upon me most forcibly that the starvation diet was decidedly best until subsidence of the fever. At the hospital we practically limited the patients to a milk-and-cereal diet during the acute febrile stage, and it was found they did much better under this form of diet than when forced feeding was attempted. We gave them as liberally as we could of the fruit juices. Plenty of water was allowed at all times; the treatment in other respects was entirely symptomatic.

Albumin was present in the urine of almost every patient with influenza. I was at Camp Taylor many times during the epidemic, and was told that laboratory examinations there showed albumin in the urine in practically one hundred per cent of cases. Casts were present in about eighty per cent.

Leon K. Baldauf: Several features about the recent epidemic impressed me greatly. One was that, eliminating the sudden onset and taking the composite picture of the disease into consideration, there seemed to be a wonderful similarity in the symptoms observed in influenza and in typhoid fever. During the severe toxemia in many instances it was almost impossible to differentiate between the two diseases. There were several things which pleased me with this similarity: First, the high temperature and the slow pulse; second, the frequency of epistaxis; third, the frequency of bronchitis; fourth, the terrific toxemia, and in many cases the mental symptoms; fifth, the abdominal manifestations which strongly simulated those of typhoid fever; in many cases the abdomen being decidedly painful; sixth, the blood picture.

In typhoid fever as a result of the terrific toxemia the blood picture shows a leucopenia; in a large percentage of the influenza cases we had leucopenia; even when pneumonia developed there was only a slight increase in the number of leucocytes. This did not mean that the bacillus typhosus had anything to do with the disease, but it meant that the infection was characterized by a terrific toxemia probably due to the absorption of enormous quantities of endotoxin such as we know occurs in typhoid fever. I was so much impressed with the similarity of the two diseases that I communicated unofficially with Colonel Conners.

The disease being so similar in many of its manifestations to typhoid fever, it seemed to me most logical to treat it practically as typhoid fever; that is, treat it by elimination.

The cardiac symptoms are not evident early in the disease, yet the cardiac picture varies considerably during the course of the disease. It is common for the patient early to have a temperature of 103 degrees to 104 degrees F., with a pulse rate between 70 and 90, but when pneumonia results as a complication the pulse rate increases. During the continuance of this complication, and for many weeks after return of temperature to normal, the pulse rate may reach 130-140-160. In some cases the heart was, during this period

considerably dilated; even two or three weeks after return of temperature to normal, the roentgenographic plates showed cardiac dilatation.

J. R. Morrison: It has been difficult for me to come to any definite conclusion in regard to the various aspects of the recent influenza epidemic, excepting that the disease is a most treacherous thing. From what I have read much difficulty has also been encountered in determining the exact bacteriology. The last issue of the Journal of the American Medical Association contains abstracts of several papers which recently appeared in European medical journals on this subject. Some of the authors give credit to the Pfeiffer bacillus, whereas others take the opposite view.

The feature which impressed me most was that people with influenza become so very ill, with such slight evidence of pathology, before pulmonary involvement occurred. They seemed to be extremely depressed and weak. As Dr. Baldauf has said in that respect the disease certainly resembled typhoid fever; the leucopenia was also like typhoid fever; but in many other respects the two diseases are totally different. I have seen no splenic enlargement nor tendency to diarrhea, the alvine evacuations were moderately formed or semi-solid. There was frequently noted a general abdominal tenderness, and the patients complained of intense backache, myalgia, etc.

The recent epidemic has shown us how little we can absolutely determine about conditions within the chest by ordinary methods of physical examination. For instance, two nurses were sent to the city from Camp Taylor, the diagnosis having been made of pneumonia, I understand, based upon X-ray examination. In one of them not until twenty-four hours after the patient had been admitted to the hospital could I locate a sign of pneumonia by physical examination. In the other case it was forty-eight hours before the physical signs of pneumonia could be demonstrated. Evidently these people had pneumonia all this time and I was unable to demonstrate it, which made me a little skeptical about my ability to make an early diagnosis in such cases by physical examination alone.

I agree with Dr. Baldauf that a rise in the respiration rate is a valuable sign of an approaching pneumonia, and I always count the respirations myself when visiting the patient. Where a patient has a temperature of 103 degrees F. or over, with bloody sputum for two or three days, I am inclined to think pneumonia must be present whether I can detect it or not. I have seen cases of pneumonia where the respirations have not been particularly high (22 to 25), the pulse rising to 130, with a considerable area of crepitant rales and other characteristic physical signs. It has been remarkable to me the amount of lobular and bronchopneumonia that has been seen during the recent epidemic of influenza.

The use of vaccine has been mentioned: We all know what the government has recently told us about this vaccine question; but even before that I was in the habit of telling my patients that I could see no good reason for administering vaccine. At the same time I have given vaccine on a number of occasions because the people insisted upon it. I am familiar with at least one case where the patient was given three prophylactic doses of commercial influenza vaccine, and later had a severe attack of influenza.

I believe the influenza patient ought to remain in bed for several days after the disappearance of symptoms. I have seen patients who developed a rapid pulse after they had returned to work. Undoubtedly the heart must be affected late in the disease, although in the early stages the pulse is usually slow.

The ingestion of an abundance of water is important; whether you add soda or not is a matter of little consequence. The question of whether alcohol should be administered as a cardiac stimulant during the complicating pneumonia is still being debated. The laboratory worker, experimenting on dogs, claims it should never be given; whereas the majority of clinicians advise the use of whiskey when indicated in the later stages.

F. C. Simpson: The experience of all of us during the recent influenza epidemic has probably been about the same. My observation has been that the incubation period is usually short, —from one to three days. I saw one case which developed within twenty-four hours after exposure, the date of which was definitely ascertained. A woman had not been out of the house for ten days and none of the members of her family had influenza; one night there came to visit her a woman who was coughing and sneezing, and twenty-four hours later the woman who had been thus exposed developed influenza. In the majority of instances the disease develops within three days after exposure.

Our experience in this epidemic has been different from the one which occurred in 1890. In the former epidemic we saw many sinus, middle ear, intestinal, endocardial and pericardial complications. During the present epidemic we have seen some tachycardia in the late stages, but there has been no endocarditis nor pericarditis.

In three hundred and eighty cases of influenza at the Masonic Widows and Orphans Home, all were in children between three to sixteen years of age. The youngest child that died was five years old, the oldest was thirteen; there were six deaths and twenty-five cases of pneumonia. The pneumonia cases appeared very unusual to me. I never heard so many different chest sounds,— bronchophony, egophony, rales of all kinds, etc., during the first few days of the disease. Later they became cases of frank pneumonia with the usual symptoms. Some of the patients who developed pneumonia had little or no expectoration

in the beginning, but it was profuse after a few days. The small amount of expectoration impressed me as remarkable in the early stages.

We have probably all had the same experience in regard to the extreme prostration observed in influenza. Within twenty-four hours the patient says he feels as if he had been sick for a month, the prostration and weakness being so marked. Extreme toxemia has been a common observation in all cases. I do not pretend to understand the bacteriology, and from what I can learn no one else does. Many kinds of bacteria have been found,—the streptococcus, staphylococcus, pneumococcus, bacillus typhosus, and Pfeiffer's bacillus. I recall but two cases of epistaxis in all the influenza patients I saw during the epidemic.

The treatment is purely symptomatic. I have been in the habit of giving the patient plenty of water to drink and a moderate amount of liquid food. I do not insist upon food being taken unless the patient wants it. In most cases there has been a tendency toward constipation, and laxatives had to be administered as required.

S. G. Dabney: During this epidemic of influenza I have not seen the large number of mastoid and middle ear complications usually observed following ordinary grip. I have seen three cases of ulcer of the cornea which are now under observation, and one case of acute inflammation of the frontal sinus; but on the whole I have seen very few complications and sequelae coming within my line of work. Of course, my observation of the disease in a general way is practically nil, I only see the complications as a rule.

I wish the essayist in closing would tell us whether it is really a well-established fact that the Pfeiffer bacillus is the essential etiologic factor in influenza. According to several of the medical journals, and especially an editorial in a recent issue of the Journal of the American Medical Association, the real cause of the disease is not certainly known.

Dr. Boggess mentioned fever, toxemia, backache, and the peculiar appearance of the throat, but said little about the bacteriology of the disease. I would like to be informed whether even in the old-fashioned grip the Pfeiffer bacillus is the well-recognized cause; and I would like to ask someone to explain the difference between the recent epidemic of influenza and the old-fashioned grip.

In regard to the prophylactic use of argyrol solution in the nasal passages: I do not see how it would be possible to successfully introduce any solution into the nares with a medicine dropper unless the patient was standing on his head! The organisms of grip being air borne, are carried to portions of the nasal cavity where argyrol deposited in the nares with a medicine dropper would never reach, i.e., the superior and the middle meatus.

Stuart Graves: I had little personal experience in the recent influenza epidemic, because most of the time I was myself incapacitated by the disease.

In regard to the bacteriology: Lobar pneumonia, for example, is not due to any single organism, and I do not understand why there should be so much argument about what organism causes the clinical condition which, for want of a better term, is known as grip or influenza. The disease is essentially an infection which begins in the naso-pharynx and later involves the bronchial tree, accompanied by an intense toxemia. It may be caused by the Pfeiffer bacillus, the streptococcus or the pneumococcus. The virulence of all three organisms may differ greatly with different strains and also after passage of the organism through the human being. It seems to me consideration of these facts would answer the question raised as to the etiological agents and the clinical aspects as well.

Unquestionably the Pfeiffer bacillus is the early exciting organism in a large percentage of cases, the other organisms mentioned probably being secondary invaders. The original grip epidemic of several years ago was due largely to the Pfeiffer bacillus, although cases were frequently diagnosed as grip when the Pfeiffer bacillus had nothing to do with it. The cases seen in the recent epidemic were certainly typical influenza clinically, as the disease is now called, although few of the cases were diagnosed on the bacteriological findings. The diagnosis was based on the clinical symptoms usually. No doubt many of the cases were due primarily to streptococcus or pneumococcus.

W. F. Boggess, (closing): In regard to epistaxis, intestinal hemorrhage, etc., during an attack of influenza: I have seen several such cases. In one case I thought the disease was typhoid fever for several days. The patient had nosebleed, and subsequently had an enormous hemorrhage from the intestinal tract. I have seen two patients who had hemorrhage from all the mucous membranes.

Another peculiar feature sometimes noted and which I am unable to explain is that after convalescence has become established the patient developed intense pain behind the sternum. Two such patients had great difficulty in swallowing in addition to the severe pain. It occurred to me that possibly the bronchial glands might be involved, and pressure from this source on the esophagus might cause the intense pain and difficulty in swallowing.

THE VOLUNTEER MEDICAL SERVICE CORPS.*

By Edward P. Davis, Philadelphia
President of the Volunteer Medical Service Corps.

Mr. President, Members of the Kentucky State Medical Association, Ladies and Gentlemen: The Volunteer Medical Service Corps came to the medical men and ladies of Kentucky with a general agreement, asking you to take this opportunity to declare your fidelity to the government of the United States. The gentlemen and ladies of Kentucky have taken the agreement so cordially and heartfully that we who came to this section of the country will go back to our work on the Atlantic coast with the greatest renewal of faith and assurance in the loyalty and well being of our country. In brief, that general agreement between the gentlemen occupying official positions in the medical interests of the United States government and the gentlemen and ladies of medical Kentucky describes the Volunteer Medical Service Corps, and there is no need for me to speak further on that point this evening.

But there are things lying very close upon my heart which I feel impelled to ask you to think about with me for a few moments.

As a citizen of Pennsylvania, I have the honor and the great pleasure to be the guest of the citizens of Kentucky. We of Pennsylvania think that we have a beautiful state, but our beauty fades before the mountains and the blue grass and the caves and rivers of Kentucky. (Applause.) We have in Pennsylvania the Shrine of Liberty at Independence Hall, and we have Valley Forge; but we cannot forget that in the mountains and in the valleys of Kentucky are the purest type of American citizenship now extant, and it is an interesting and extraordinary thing, but to be expected, that when the call to help our country came, from the mountains of Kentucky there came a larger representation, medical and civilian, than from any other part of these United States. (Applause.) And the people of Kentucky are remarkable for one thing, among others, which is well described in an anecdote told me by John G. Carlisle, whom some of you remember. Carlisle said, "I was riding to town one day, and I met a colonel whom I knew, and I passed the time of the day with the colonel, and the colonel said, "How do you do, Mr. Carlisle. Have you been to hear the evangelist who is holding meetings in our midst?" And Carlisle replied, "I have not, colonel." And the colonel said, "Well, Mr. Carlisle, he is a good man, and an earnest man, but he is making one great mistake, sir. Do you know that he is preaching that hell is very hot, and that many of the best citizens of Kentucky are liable to go there. Now, sir, the people of Kentucky will not stand it." (Applause.)

When there is a question of wrong or injustice, whether it be launched by the authority of ecclesiastical dogma or fanaticism, or political chicanery, the people of Kentucky will not stand it. (Applause.) And the people of Kentucky go back to Daniel Boone and the men with him. We sing now for patriotic airs,

"There's a long, long trail a winding,
Through the land of my dreams."

But Daniel Boone and his men traveled the Wilderness Road for many years; and then we must not forget that meteor in the political heaven, Henry Clay; and then that greatest son of this great state, that man born in a log cabin—Abraham Lincoln. (Applause). On the great heights of rugged power he stood like a lone pine. He was clad in the soft dark robes of human grief. The lightning struck about him, but he stood, and when he crashed to earth, the world, aghast, paid tardy homage to heroic power.

"The man of sorrows and a king of men,
Since Lincoln lived, the world has better been."

There are certain products of the State of Kentucky which are suggestive of your methods of dealing with diseases of the body politic. I am informed that you produce the largest quantity of hemp in the United States, and I am informed that you have within your boundaries that stream known to politicians as the salt river (laughter), and I need scarcely say that a state so enriched by natural resources is amply equipped to maintain political justice within its boundaries, and I would have you notice that in the Volunteer Medical Service Corps to-day each medical man and woman in this state has an opportunity to place him and herself upon a status of patriotism approved by a national body of councilors in Washington, which renderes him and her independent of political chicanery. (Applause). I think you know what I mean.

There are pearls and diamonds in Kentucky, but there are other jewels fairer than they. One of the most beautiful buildings at Washington is that devoted to the women of America, who manifested their patriotism so superbly in '61 and '65, and in that shrine of American women famed the daughters of Kentucky have a most honored place. (Applause). But I am speaking largely to a med-

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ical audience, and it is but a short distance from this city that the medical hero McDowell lived and wrought, and while there is a statue to McDowell in the heart of every American physician, McDowell's heroism would have failed but for the heroism of his patient, Mrs. Crawford. (Applause.) She rode over the mountains on horseback with an abdomen so enlarged by an ovarian tumor that her saddle bow chafed the skin. There was no anesthesia in those days, and no asepsis. A room was made ready for the operation, and a table provided for the patient. The instruments were washed and wiped and laid upon clean towels. There was a thong of buckskin ready with which to tie the stalk of the tumor. McDowell, his son and assistant rolled up their sleeves, washed their hands, and when every thing was ready the door of the room was opened, and Mrs. Crawford walked forward. She was gently placed upon the table, a handkerchief laid over her face, and she said, "Dr. McDowell, I am ready." The stalk of the tumor was tied with the thong of buckskin which was left at the lower angle of the wound, and which gradually became detached and was pulled away. Three weeks after the operation Mrs. Crawford rode home over the mountains a well woman. She had by her courage opened the door of life and health to thousands of her sisters. Outside in the village were waiting men of the village ready to hang McDowell had the woman died, for the men of Kentucky will not stand to see a woman abused. (Applause.)

But, ladies and gentlemen, to-night we are no longer the men and women of a state or a city. We are citizens of these United States coupled together with hooks of steel of enduring friendship as never before. (Applause.) And I cannot refrain from asking you to think earnestly upon the crisis in which our country has entered, and I wish to distinctly put in the background the war on the Western front. Horrible as is the warfare on the Western front, we shall miss the great vision of the future, we shall miss the meaning of the present if we do not see beyond the battle smoke and hear beyond the roar of cannon the sounds of coming life yet to be.

Do you realize that this country has undergone a revolution since 1913? Do you remember that in 1913 the financial capital of the United States was in Wall Street, New York? Do you remember that in 1913 it was possible for no young man to make a valuable invention and to honestly profit by that invention to the full extent, for he would be bought out or forced out by corporations? Do you realize that no institution or body of men could begin a great financial enterprise in this country save by the permission of a group of financiers? Do you realize that on one side stood the insolence of corporate life and pride without body to kick or soul to damn. On the other hand, do you remember the lowering cloud of insolent men, unorganized men, who unworthily called themselves labor? Do you remember that the republic was growing rich and fat and lazy and selfish, and that men had been so long in power they imagined they owned power, and that the government was fast going into groups of powerful men, and that slowly but surely the canker of luxury was eating out the vitals of the American republic, and those of us who read history and recall its lessons could not but think of Rome and Greece? and then there came a man into public life of pure American ancestry, educated and trained as a great democrat, with constant faith in the American people, with an abiding belief in the Constitution, and with a personal reliance upon Almighty God, resolved that this country should see a new freedom; and the men who carried him into office in 1913 were minded like himself.

The most important financial measures taken in this country for centuries was the establishment of the Federal Reserve Bank, and I leave it to any man in this audience, business man or banker, as to whether or not that one measure has not proven of the greatest possible value to the country in this enormous crisis. And that is to be credited to the Democratic party and its leaders.

The Adamson Labor Law, and the decision of Justice White against the unlawful strikes was a great step in a right direction. And other matters began to shape themselves. The tide began slowly to turn. The multitudes that lay basking in the sunlight because the tide of national independence had run out, began to gather again by the sweet fresh waters of a new national life; and all the while across the sea for years there had been slowly unrolling on the films of history the greatest catastrophe the world had ever seen, and this nation had just begun to prepare itself against the most insidious attacks upon its national life. It had just found its new freedom when the storm broke. Let us go back for a moment.

Seventy-six lit the fires of the French revolution. Washington built a new altar to the God of right and lit a fire that shone around the world.

> "Like shaft of stone, it stands alone,
> The memory of Washington."

The French revolution produced the greatest individual robber, murderer and assassin the world had seen—Napoleon Bonaparte, who came to his own at Waterloo, which decided that no man can ever again obtain a

stranglehold on the liberties of the world. Then Germany began to show its hand in '48. In '61 and '65 there began the war between our states which threatened to disrupt the republic. But the answer was no. And then in '70 and '71 through a faked telegram Bismarck threw the German army at the throat of France; and after that war there came a period of trade rivalry. All the while the idea of world possession was seething in the minds of a small group of men ruling the German Empire.

Who is this Kaiser? He is the flower of rotten royalty. His father and his mother died of cancer. He himself was permanently injured in his birth. He was a miserable boy, ill-tempered, a nasty, ungovernable man. Bismark had warned Germany to give up Alsace-Lorraine lest its retention would bring destruction, but a group of men favored holding it. And so this paranoiac, this miserable specimen of humanity, and the sycophants who surrounded him drove the German people on and on to their destruction, and now the storm has broken. The forces of freedom and the forces of autocracy have come practically to a deadlock and the balance must be turned by this republic, and this republic divided against itself could have turned no balance, and this republic weakened by luxury, by indolence, could have turned no balance, and the people to-day feel as never before they are strengthened by great fundamental reforms, fired with one indominatable purpose, the greatest people in the world, with the greatest ambition and the greatest destiny. (Applause.)

And now, ladies and gentlemen, this matter of killing on the Western front is not the greater part. There was recently advanced on the floor of the United States Senate a proposition regarding the future of the world after the fighting was over. That proposition has the earmarks of the policies which dominated this country prior to 1913. It emanated from that source. The proposition is a simple one: Destroy the German army. Hamstring and throttle the German people. Then came the suggestion to build a wall of high protection around this country, to sit down behind it and get rich again. That has a familiar sound. But where has the gentleman who originated this proposition been during the last five and a half years, If I remember rightly, Rip Van Winkle slept his sleep in the hills on the shores of the Hudson River, but this Rip Van Winkle sat in the Senate Chamber at Washington or on the shores of Massachusetts Bay. I place in direct contrast to his statement the ideas, as I understand them, of President Wilson. Destroy autocracy. Destroy no nation. Furthermore, this republic can never remain isolated from the remainder of the world. (Applause.) That day has passed.

Do you know that within six months after the end of this war there will be regular communication by airplane between the United States and Europe? Do you know that there is now daily mail service by airplane between New York and Washington, changing at Philadelphia, and that there is or will be daily mail airplane service between New York and Chicago? Do you realize that if you would be isolated you cannot be. Our foreign possessions make that impossible, and this republic must take it splace among the nations of the world, and when peace comes, as come it will, and as bring it we shall, it must be a peace by a league of nations, and to that league shall be admitted every nation on earth who proves itself a virtual democracy and governed by the tenets and prineiples of democracy. (Applause.) If you have no such peace this war will be repeated within fifty years, and the next war would be worse. Think of what it would be if the agencies of destruction brought into this war were unheard of to-day, what would be the next? War would go on and on until the planet is destitute of human life, and it will be like the moon, outwardly splendil as of old, but inwardly a sparkless void. Unless there can come through this war the common and diffused belief in democracy, in the rights of the individual man, in the fact that nations are but men in aggregation—unless that idea so clearly, so forcibly set forth by the great chief of this nation shall prevail, then war upon is the heritage of the future.

Again, ladies and gentlemen, our beloved country will share somewhat in the great renewal of democracy. There will be many things set right. Women will have their rights, and not their wrongs. They will no longer be classed with the insane and criminals, and those not intellectually enabled to enjoy the franchise. There will be better relations between labor and capital; there will be a better citizenship, and above it all, whether it be the battle-line or industrial struggle for life, or whether it be a struggle of man with man, there will always be the sacred presence of womanhood, sanctifying and blessing by her life the struggles of the world.

Do you think, men and women, of the man who is your man and my man, who is living for you and me, living alone for his country? Have you wondered what he thinks about you when, sometimes in the still hours of the night he looks out of his window across the Potomac and see sthe searchlight falling on the top of the Washington Monument. He looks over into Virginia where he was born; he

thinks of the days of his boyhood. He thinks about the past with its sorrows and its trials; he thinks of you and me. Have you wondered about this man who to-day is the most powerful man in the world; who has a glorious vision of the past and conception of the future; whose voice is listened to as is the voice of no other living being. Have you thought you would like to know something more about him? You know somewhat. He is your own pure American stock. He was taught by his father. He is a boy who was brought up in the traditions of democracy, who studied the great democrats of the American Revolution—Charles Fox and Pitt, and then John Bright and other great men. And he began to read under his father's guidance such books as would enlighten him in regard to democracy in connection with being taught by personal intercourse. He was accustomed to make speeches to an empty house for practice. He was always a hale fellow; a delightful boy and young man, and in the university he was one of the best fellows in the true sense of the word; indifferent to wealth or position; hating arrogance and assumption; a man who even then wrote brilliantly. His papers were published in foreign journals. He was a delightful speaker and the best debater and student of United States history in the university. And then as an educator he gradually felt his way to the pulse and heart of the American people until in a famous controversary he stood typifying democracy against plutocracy in the university. And then crossing the scholastic bridge he became governor of the State of New Jersey, and what a riddle he was to the Jersey politicians. One of them came to his gang and said, "see here; you can't do anything with that man Wilson. He don't want anything. What can you do with such a fellow?" He knew them and read them like a book, for he once remarked to us, "Politicians are simple-minded; they all want something. It is simply a question of finding out a man's price, and then you know what he is. (Laughter and applause.) Mark you, I use the word politician, not statesmen. And then taking upon himself the great task of carrying the nation first, and then through the providence of God the horizon widening, the storm raging until the open sea rocked the ship of state, with him at the helm the storm broke over the earth. Will you trust him? Will you go with him? Will you grasp the significance of the present world crisis? Will you put aside the question of simple destruction for this righteous plan for a righteous end? But it is not the end. Will you think of a world peace by a democratic league of nations as the one solution against the horrors of repeated war, and will you put this nation in a place of power on earth to bring about such a righteous consummation? (Applause.) And what will be his reward? What fame should we ask for him? Not the fame of a great conquerer who rides over the dead bodies of men, women and children; not the reputation of a man who had his way regardless of the rights of others; not the reputation of a man who knew most of human learning; not the reputation of a man who was bravest because most unfeeling, he would have his glory lie in the love of the people of little nations, the simple folk of the world.

I can look forward ten or fifteen years to a little farm in Siberia. At the close of a summer day, there stands a little cottage, and at the door of the cottage are the mother of the family and her daughter, a child of sixteen. The sun is setting in the West over the green fields and meadows, and the pastures and the trees are green, and there across the fields come the father and the boys after the day's work is done and the girl says to her mother, "Mother, I was five years old when the great war began, and I remember how you hid us in caves for days, and uncle was killed and my cousins were killed, and we were hunted like wild beasts, and why is it that our country is not at war? Why is Siberia free?" And the mother will answer, "My dear, there beyond the golden west, there lies a great land, a great country of freedom, and father will tell you the same thing for here he comes with the boys, and the father says to his girl, "Yes, my child, there beyond the goldenwest, as you see it, lies the great American land of freemen; they came and set us free. They took nothing from us. They wanted nothing. They came because they are free, and they would have us free. And there was a great American who led them on. And the child will say, "Was he a king father?" And the father will reply, "No, my child; he had no crown of gold or jewels, but he was a man of all men, the greatest of all of them, the whitest in soul of all men, cleanest in vision, bravest in heart; and from the little church tower in the village the Angelus will ring and the members of that family will fall on their knees and with bowed heads thank God for the American people and for Woodrow Wilson. His crown will be the beaten gold of the love of simple, honest folk, and the stars in his crown of rejoicing will be the freedom of the world." (Loud and prolonged applause.)

At the War Conference Major McCormack introduced Dr. Davis who made the following address:

This introduction by Major McCormack is as unlimited as the response once given to a toast "The United States of America." The man who responded to the toast rose and said: "The United States of America is bounded

on the north by the Aurora Borealis; on the east by the rising sun; on the south by the gates of hell, and on the west by the day of judgment. (Laughter and applause.)

Imagine my position in rising after such an introduction, but the keynote of Major McCormack's introduction is a personal confidence which makes me feel at home at once with you.

Now, gentlemen, I may possibly come nearer to you because I am a civilian; I am one of those old men who is not wanted in active service, so I have to do the best I can.

I have had some work in connection with the Governor of the State of Pennsylvania in establishing Medical Advisory Boards, and I am on the Medical Board of the Council of National Defense and in various other ways, so that I have some personal knowledge of what a civilian can do and will do in the Volunteer Medical Service Corps. And aside from my feelings for my country, which I trust are as deep as any man's, there has come to me in the past six months a soul stirring appeal from the President because for a long time, for about forty years, I have followed his career and have enjoyed his friendship. Do you know what he thinks of you doctors? Years before the war he wrote me: "The profession of medicine is so made up of soul stirring compassion and sympathy, mingled with the coolness of ripe judgment and brave decision, that no man can adequately embrace the profession and not be ennobled by it." (Applause.)

How has he manifested his confidence in the medical profession? By appointing and establishing a position, second only in importance to cabinet officers, a department of medicine in the Advisory Commission of the Council of National Defense, the first time in the history of this country that a President has so designated and honored the medical profession.

I need not say much to you of him personally, because you know him in a way, and in another way you may not and may like to know him better. He is, as you know, of your own Scotch-Irish American stock. He was born as near Kentucky as he could be. It was not his fault he was not born here. (Laughter.) He is of the pure bred American type. He was educated by his father, personally trained. When a boy he formed ideals of American citizenship which were largely embraced in the speeches of John Bright and of other great writers and speakers. On week days he went to his father's church, went into the pulpit and declaimed portions of John Bright's speeches to empty pews; and when he came to Princeton in '75 he was one of the best of fellows of the best type. He cared nothing for money; nothing for position. He was the great democrat among us all. He was possibly the best writer and speaker that we had. He sang sweetly in a tenor voice. It is said of him that he could have made a baseball pitcher had he not been too lazy to practice. And in his university days he wrote papers which were published by the leading periodicals in this country and in England upon questions of international politics and statesmanship. Then came his study of law which he abandoned as it was too slow and too indefinite to suit him. Then came his career as a teacher. He took degrees at various universities. At Princeton he taught political economics and his lectures were well attended. When he became President of Princeton there was a great fight between plutocracy on the one hand and democracy on the other. It is needless to say where he stood. He had with him a majority of the trustees, the student body, and instructors, and one day he asked the trustees who supported him most loyally to meet him. He said to them, "Gentlemen, Am I under moral obligation to you to remain in this position because you have supported me?" And they said, "No, you are free." "Then," he said, "I shall enter active political life." He had then no accumulation of property and a family, but he crossed the Rubicon, so to speak, and became Governor of New Jersey. The rest I think you know fairly well. He remains to-day the great democrat of the world; he remains to-day the most far-sighted statesman now living. He remains to-day the living voice for human freedom—a voice listened to around the globe, and when he answered various sophistries of church and diplomacy, no one else spoke. And behind it all, there is a warm-hearted, affectionate, loving friend and true man. His character rests upon a tripod of three branches: Faith in Almighty God. We are fighting against Mohammedans. He is a Christian. Faith in the Constitution of these United States as a God given document for human liberty. A passionate faith in the soundness of the American people.

In the early years and days of his administration, before war issues were predominating, when matters came up concerning this nation alone, it was said to him on various occasions, "Will not politicians fight the good things which you strive to do?" His invariable answer was, "The American people are sound to the core." And again, he followed that great democrat, John Bright, who summed up his political wisdom in one brief sentence: "When parties fail, try the people." Such is the position of the man whose sole ambition it is to make the world safe for democracy. (Applause.) Such is the man who in the performance of his duty devotes every atom of his physical, mental and moral strength to this

nation; such is the man who makes friends with doctors that he may remain well. Such is the man who altered his daily life with regard to the preservation of his physical health and strength that he may serve the nation. Such is the man who is to-day a brother in arms to you and me. (Applause.)

As to the Volunteer Medical Service Corps, what do I see members of this corps now doing in the service of the country? I see them serving on local and medical advisory boards. Many of us are older than the men who may go into active service. Our age and experience peculiarly fit us for such work. Again, I see them in my own town forming consulting boards and saying to the Home Service Committee of the Red Cross, we will help you with any case you have.

In Philadelphia eight hundred applications for help are received weekly from the wives and children of men in active service or in industrial work for the government. Those women and children are on the hands of the nation. They do not receive in many instances sufficient from the government to tide them along. In some cases, through no fault of any one, payment is delayed. I have them in my branch at the Jefferson Hospital. We all have them. The Red Cross Home Service Committee sends visitors into the homes of these women, and this consultant staff of the Volunteer Medical Service Corps see these women in their offices, or go to their houses, or admit them to hospitals, and see that they receive attention and their children are cared for.

Again, we have applications from industrial plants. There is a great hard working plant in Pennsylvania paying $4,000.00 a year in house rent for its surgeon, and as that surgeon goes to the front the forces in that plant must be kept up, medically and surgically speaking, otherwise the plant drops behind in its work and the government suffers. Will the Volunteer Medical Service Corps send a surgeon? A man possibly disqualified for active military service, or an older man in a neighboring town eight miles away, by dividing his labor by the use of trolley and motor cars can take care of that plant. It takes from six to eight men to keep one man on the firing line. We can be one of those six or eight men to keep one man on the firing line.

Let us take the work of medical teaching which comes very close home to me. Take our city hospitals, here and in the other cities of Kentucky. At the Jefferson Medical College Hospital the staff of our younger men have gone into the service. Take our hospital unit, one of our professors of surgery deserted the first chance he got. He is a Southerner. (Applause.) He would not wait for anybody. I have reference to John Gibbon, nephew of General Gibbon of the Army. He didn't wait. The first chance he got he went. He was over there a year in May as consulting surgeon to the American Expeditionary Forces. Dr. DaCosta and Dr. H. A. Hare are in the Navy, but doing their work in the Jefferson Medical College and Hospital, and going to naval hospitals operating and teaching. We are all in it in some way or another. But sadly crippled and pouring into the hospitals in the great cities are the great population who cannot get the customary services at home. All of us feel better in our work if we can know we are linked up personally with the government. If we can wear this insignia on our coat (pointing to the insignia of the Volunteer Medical Service Corps), it will mean something. When I sat down to luncheon with a captain in the dining car, he looked at me and said, "You wear the insignia; you are a doctor." We were brothers at once. (Applause.)

Then again, there is a dividing line right through this country. Who is loyal, who is not? It is entirely unnecessary to bring up that question in this assembly or in this state. (Applause.) But you do not know what the German propaganda on the Atlantic Coast is. You do not know that some of the officials connected with the draft boards get faked telegrams or bogus orders issued at Washington. You do not know that men are sent purposely among the workmen of great industrial plants to disseminate all sorts of false information about the government and the war. You do not know that a man whom I know saw on the streets of New York City one of the principal professors of a German university whom he had known, and walked up to him and said, "You have the honor to be Professor So and So whom I had the pleasure of visiting in Bonn, Germany." The man said, "You are mistaken, sir." Eventually the Secret Service were on his trail. Many of you do not realize possibly these things; perhaps you do, but we have them and we live with them.

Now, gentlemen, a member of the Volunteer Medical Service Corps is an official of the United States Government. If at any time one of you become personally cognizant of the work of a propagandist, in a quiet way you may be able to put an end to such work. This insignia will admit you to great industrial plants.

We live in the midst of a great shop in Philadelphia. It began down at Wilmington with the DuPont Powder Works, and if you do not get blown up there, go up the river to Essington to the great Baldwin Locomotive Works and the great municipal works, and go to Hog Island and to the great shipyards

which extend over thirty miles along the Delaware, the Clyde of America, with the hammers ringing night and day, with a population of 500,000 people brought into that vicinity within a short time.

What did Mr. Schwab do when he moved? He took his vast force and literally loaded them on motor trucks. The railroads could not do the business, and so motor trucks had to be used. We now have motor truck service from New York to Philadelphia to do the business of that part of the country. We have motor express service running under government supervision with a train of fifteen and twenty cars. Our roads are not smooth riding, and Uncle Henry has not put an extra spring in the back seat. (Laughter.) But we don't mind a bump for the government. The cars can bump us, and we will bump the Hun. (Applause.)

Now, brethren of Kentucky, do you know the job better from what little I have said about it? If you do, I am sure you are with us. (Applause.)

THE MEDICAL MAN AND THE WAR.*

By J. D. Liles, Vanceburg.

I know of no more important subject, no more inspiring theme, calculated to send a thrill of patriotism through a man's physical economy than the one entire absorbing topic —The World War—and to be more explicit, the medical man and the part he is and must play in this maelstrom, where twenty-three (23) nations of the earth have made a declaration of war against the German Imperial Government and seven (7) others have withdrawn their diplomatic representatives. To begin with, it is of more than passing notice to medical men to know that both the father and mother of the Kaiser of Germany died from cancer. His mother was Princess Victoria, a daughter of the late Queen Victoria of England. When she was to be confined at the birth of this beast in human form, they sent all the way to England for one of the Royal Physicians. It seems that this was an abnormal birth—a dystocia, to be more accurate in medical phraseology, and when little Bill of the Royal German Family was born and first saw the light of day and gave his first yelp on God's earth, that he has later tried to either covet or ruin, something was wrong with his left arm; it never grew proportionately, withered from lack of use and to-day is four inches shorter than its fellow of the opposite side. The mother forgave, but he, true to his German instinct, never did, and to this good day hates with all the power, vehemence, villainy and vituperation his wicked soul and mental capacity can command, not only the attending physician at his birth, but also the English nation, you, me and all of God's elect, whose mother tongue is the English language. We might further state that he has a running ear, which all the scientists and otologists of the world have failed to benefit or cure and we are led to believe that some sweet day in the not far distant future, this abscess will point inward to the brain, and he will develop a meningitis and die a raving maniac within forty-eight (48) hours; and may God speed the day when this event may come—and happy day it will be to all the world, except to a small coterie of politicians at Potsdam. "Be not deceived, God is not mocked, for whatsoever a man soweth, that shall he also reap." To these two facts if you add a third, his irregular notched teeth, and then a fourth, the peculiar, vicious eye—if my judgment goes not astray, you have the famous Hutchison's Triad—an inherited syphilis.

Of course none of us has ever seen and most likely will never see this red-handed murderer of helpless men and innocent woman and children, this minister of the gospel and prostitutor of God's religion. It has been my own good fortune, however, to have met and talked with one man who has seen him. The nearest I have ever come to seeing Old World Royalty was in February 1902, when Prince Henry, the Kaiser's brother was touring America; and let me say gentlemen he was not traveling incognito—no, quite the reverse, he had a special parlor car attachment, military band and all the eclat, pomp and glory the Crowned Heads of Europe were accustomed to enjoy; but I must say that I heard nothing and saw but little. But, gentlemen, let me impress most indelibly upon your minds this fact: If it was not for this Brother Henry you and I and all of us would most likely not be here to-day; we would be fighting for the deliverance of America on our own soil and who knows but what each of us would at this very time have passed into our eternity. And let me venture to say that it is my own private opinion, that the man who gives his life—who pays the supreme sacrifice that the world may be safe for God and mankind, whoever he may be, regardless of whatever nation to which he may owe allegiance, or the flag he follows or the corner of the earth's surface from whence he came—that the spirit of this man, like Elijah of old, will be instantly caught up and wafted onward to its eternity in peace with the Father that gave it. Now with regard to the Prince Henry episode, this is what happened: At the time Germany brought about the assassination of

*Read before the Lewis County Medical Society.

the Duke of Austria that this cateclysm of war might begin, they had invited the British fleet, it had been accepted and they were paying a friendly visit in German waters behind the Kiel canal; and during the dancing, banqueting and wineing, Henry got one too many. You know the tendency of the German is to get "soused" on occasions of this kind, and most any other occasion when opportunity offers and some other fellow pays the bill. It was on this occasion that he intimated to the British commander that he could close the Kiel canal and hold the British fleet. The commander became instantly alarmed and told Henry he would go to sea next morning at 6 a. m. And right here is where the German ran true to form—made a mess of a diplomatic occasion—he by a slip of the tongue while full of good wine, said to the commander of the British fleet "I am sorry you are leaving and I am sorry you came. No greater "bull" or "bone head" sentence ever passed the lips of man; and when peace finally comes, and come it will—and the historians record the acts, deeds and heroism of the great actors who appeared on the world's horizon, during this the greatest of all wars, where the liberty and freedom of the entire civilized world is being weighed in the balance, those twelve (12) words will go down among the archives of civilization along with the ten commandments, the Sermon on the Mount, the Apostles' Creed and the Lord's Prayer. Had it not been for this "slip of the tongue" by a wine-soaked German, the British fleet would have been not only lost to themselves, the Allies and to America, but would have been converted to Germany's use, and long ago would have landed a German army on America's soil and we would be now grappling in the throes of a bloody war here at home, "Where the Star Spangled Banner shall wave, o'er the Land of the Free and the Home of the Brave."

Your flag and my flag,
And how it flies to-day
In your land and my land!
And half a world away!
Rose-red and blood-red
The stripes forever gleam:
Snow-white and soul-white—
The good forefathers' dream;
Sky-blue and true-blue, with stars to gleam aright—
The glorified guidon of the day, a shelter through the night.
Your flag and my flag!
And, oh, how much it holds—
Your land and my land—
Secure within its folds!
Your heart and my heart
Beat quicker at the sight:
Sun-kissed and wind-tossed—
Red and blue and white:
The one flag—the great flag—the flag for me and you—
Glorified all else beside—the red and white and blue!

Some one has said "O, this war is 3,000 and more miles away, that distance lends enchantment, and it does not concern me,"—but I wish to state that persons who make such remarks are German propagandists, either openly, through ignorance or by innuendo. And at this instance I wish to ask you this very pointed question: When the mortality lists are being compiled and they contain the names of those near and dear to you—perhaps members of your own family—is that mortality list far away?

The medical profession is being called upon to bear its full share of this burden, and with this aim in view, there has been created by the military establishment, with executive approval what is known as the National Council of Defense, composed of the Surgeons General of the Army, Navy and Public Health Service and Drs. Martin and Davis. Associated with these men are the Secretaries of War and Navy, the Chief of Staff and the Provost Marshall General. These men meet every Sunday afternoon at 3 p. m. and discuss such subjects as are of vital interest to our profession. By your permission I will now quote some of the most salient points from the recent address of Dr. Martin at the Kentucky Medical Association: "We formed what we call the National Council of Defense. Every person holding a degree of M. D. from a recognized medical school is entitled to and should enroll as a member, this without regard to sex or color. All members will be furnished and asked to wear the insignia of membership. Every physician in the United States has been mailed what you might call a questionaire, which you must fill and return in the franked envelope. Each person should designate the branch of service he prefers if the exigencies of war demands that he be removed from civilian life. If a man is essential to community needs at home he should so state. This is what you might call a gentlemens' agreement, that you agree to accept service and not wait to be drafted. Remember, your status will be investigated and passed upon by a committee of your brother physicians and only those who can best be spared from the work you are doing will be called into our Country's service. The great majority of you all will remain in your status quo. Should it become necessary to call to the colors the the only physician in a community—we will send to that locality a man who is past the military age. Remember this is a gentlemens'

agreement and every person must fill his or her questionaire in some manner so we ean know where you stand on this great world eonflict." There were 614 Kentucky doctors who answered their eountry's eall up to September 4, two weeks ago to-day. (There are nine doctors in Lewis County and each of the nine has signed to go any time Uncle Sam ealls). Of course none of us particularly want to go into war where the prineipal oeeupation is killing people. We are a liberty-loving, law abiding, God fearing profession. However, there is not one of us but what would enlist this very day and go immediately to the front, if we knew that by doing so it would hasten the dawn of peaee and if we were eonvineed that our Country's life, our own homes and lives were being weighed in the balanees and our individual weight was neeessary to turn the tide in favor of victory.

The following lines composed by Harry Shaw, Sr., of Frankfort, Kentueky, being so appropriate, I ean not refrain from their use:

Come all you handsome lovely maids,
In Old Kentueky dwelling,
Beware of one with flattering tongue
While love to you he's telling.
Of kindest words he says, beware!
Be wise and do not mind him,
He'll say he'll love you till he dies,
Then leave you sad behind him.

In Lewis County long I've lived,
Quite free from war or danger,
But Uncle Sam enlisted me
To fight the German stranger.
He gave to me the stars and stripes,
And in a eamp eonfined me,
And there I thought my heart would break
For the girl I left behind me.

My love and I are far apart,
But still she would not blame me,
I said I'd never her forsake,
If she would only elaim me.
But Woodrow Wilson ealled me forth,
To fill this post assigned me,
My heart is aching for the hand,
Of her I left behind me.

I see in dreams her ringlets fair,
Her eyes like diamonds shining,
Her lovely form, her beauteous faee,
I feel her arms entwining.
But with these boys I've cast my lot,
My pledge to them will bind me,
To fight for England, home and France
Though you are left behind me.

But when these nations once again,
Sweet peaee are found enjoying,
One happy thought alone will find,
My soul's entire rejoicing.
The thought that soon my native land,
Upon its shores will find me,
May Heaven then to me restore,
The Girl I left behind me.

PELLAGRA, THE OLDER AND NEWER IDEAS AS TO CAUSE AND CURE.*

By C. B. VanArsdall, Harrodsburg

To those of us who have seen very little of pellagra the statement that it is estimated that there were 125,000 eases south of Mason and Dixon's line in 1917, comes as a distinct shoek. And after that shock follows the very strong eonviction that we should learn at onee all that ean be learned of the cause and eure.

Lavinder, in his History of Pellagra, says, "A disease, quite unknown, is suddenly reported in Alabama, South Carolina, Georgia, North Carolina, Texas, Illinois, and elsewhere, not as a rare affection, but actually in epidemie form." Just so had it appeared in Europe more than a eentury before,—first in Northern Spain, then in Northern Italy, later about Milan, a few years after in Southwestern Franee. And there are perhaps not a few of us who would assent to the expressions used by the early European writers as to the malignaney of this new disease. "Horrible and obstinate," says Casal; Frapolli ealls it "one of the eruelest diseases that God ever sent to man; "murderous" is Strombio's epithet; "a terrible affliction which is hurrying whole populations to the grave" is the opinion of another early writer. This apparently sudden appearanee, rapid spread, and great intensity suggest an infectious process, but by no means warrant sueh an assumption. (Lavinder.)

The distribution of the disease presents some striking points of similarity also. In Spain it occurred in only a small part of one province; in Italy only in the Northern and Central parts; in Franee only in definitely restricted areas. In our own eountry the South is the home of pellagra, though some eases are now reported from almost every state.

Whence comes this terrible malady? And what may be its eure? The answers to these questions, when worked out fully, will mean life and health to thousands of poor sufferers in our fair land of the South.

CAUSE.

Gaspar Casal, the Spanish Hippocrates, gave us the first deseription of pellagra published in 1762, and he is rather definite in his ideas of its eauses. He thought it due

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to atmospheric conditions prevailing in that particular locality, and to the diet of maize and millet eaten by the miserable peasants who were the principal sufferers: Food, he thinks, must have an important influence in the causation of the disease, but in itself is insufficient to account for it. Atmospheric conditions and diet combined, in his mind, constitute the essential causative factors, the former acting as a sort of predisposing agent to lower resistance, and the latter precipitating the disease.

Frapolli in 1771, in his "Observations upon a Disease known in Common Parlance as Pellagra" (translated by Dr. J. W. Babcock) says as to its cause, "Why ye Immortals above? Is it not sufficiently evident that insolation, or exposure to the sun, is the only cause?. What if someone thinks otherwise and contends that food is the one cause of pellagra, prithee, let the sophist of this kind answer me? Why are so many paupers who use the very worst food afflicted not at all with Pellagra? Why are the peasants dwelling at home and using the same victuals free from this disease? Why in the time of high cost of living (this in 1771) does anyone escape from being a pellagrin?" He then goes on very naively to observe, "But among doctors entities should not be multiplied unnecessarily lest confusion arise; and, since insolation is sufficient by itself for producing this malady, other causes should not be injected which *per se* do not yet produce pellagra."

From the first description by Casal down to the present, Indian corn, or maize, has been regarded with suspicion as the direct or indirect cause of the disease. Some writers have merely in a general way accused corn of being the offending agent; others have advanced elaborate theories to explain the causation of the various symptoms. The Italians generally have adopted the so-called toxico-chemical theory so ably elaborated and defended by Lombroso. In Lombroso's own words "In pellagra, then, we are dealing with an intoxication produced by poisons developed in spoiled corn through the action of certain microorganisms in themselves harmless to man." So firmly convinced were the Italian people that Lombroso was correct in his contentions that they instituted the most elaborate measures calculated to prevent the use of spoiled corn as food and thus act as a prophylaxis to the disease (Deaderick-Thompson).

Other theories advanced are several depending on auto-intoxication in one form or another, but nearly all having as a basis the use of corn as food. Other dietetic factors than corn have from time to time been proposed as the cause of pellagra. Thus Strombio, as far back as 1784, considered bad food as an important cause. Others thought the lack of salts in the diet was responsible. (Deaderick-Thompson).

Dr. Lonis W. Sambon, who originated the accepted tsetse-fly theory of the causation of sleeping-sickness, advanced the theory that pellagra was caused by the bite of *simulium reptans,* a fly belonging to the diptera, or two-winged flies, some animal parasite being carried by the bite. This theory has now been abandoned.

The Thompson-McFadden Pellagra Commission, after a very painstaking series of investigations, reported in 1913 that "Pellagra is, in all probability, a specific infectious disease communicable from person to person by means at present unknown." In a later communication, Dr. Siler, of this Commission, says that probably "Pellagra is a low-grade infection of some kind"; also that "predisposing factors are to be considered in the etiology of pellagra, and one of the most important predisposing factors is diet and nutrition." Thus the question comes back to diet, as from the beginning.

Recent views of the cause of this fearful malady seem to tend more or less strongly toward the dietetic theory. Some consider the diet alone as causative, others some particular article of food.

A brief statement of the views of several men prominent in the study and management of the pellagra problem will perhaps be of interest.

Dr. Joseph Goldberger, whose work has caused wide comment in recent years, in a late publication states as his opinion that "Pellagra is caused by eating a faulty or unbalanced diet, and that people who consume a mixed, well-balanced, and varied diet, such, for example, as that furnished to our soldiers and sailors, do not have the disease."

Dr. C. H. Lavinder in a personal letter dated August 15, 1918, states, "In my judgment pellagra is probably a disease which is due either primarily or secondarily to a faulty diet. Just what the fault in the diet may prove to be the future only can determine."

Dr. Henry F. Harris, of Atlanta, expresses in a personal letter dated August 25, 1918, the very positive belief that "The malady is produced by the constant eating of maize. This view is held by all of those who have really studied the affection in the old world, and has been officially recognized by both the governments of Italy and Austria. There is a vast store of knowledge on the subject in foreign lands, mostly Italian, in which pretty nearly everything that could be thought or done in connection with the matter has been fully discussed."

Dr. J. W. Babcock, of Columbia, S. C., who

was among the first to recognize pellagra in this country, and who has been most prominently connected with the study and managementment of the problem since, believes it due to a deficiency in vitamins in the diet, probably not the lack of any single vitamin, but rather a general deficiency in vitamin-containing foods. In his judgment canned foods have a causative action, while the part played by maize is uncertain.

CURE

In regard to the cure of a disease so varied in its aspects, as might be expected, a great number of remedies have been suggested and used more or less successfully.

Frapolli, writing in 1771, advocated, for the incipient cases, "externally the bath and friction;" internally diaphoretics and eliminants. In the more advanced cases he advocated also tonics. The diet, he says, should be starchy vegetables, flesh being omitted. The latest views as to treatment are not very much at variance with this.

Lombroso employed arsenic in the treatment of pellagra with the idea that, while it was not a specific, it was useful in many cases.

In his own words "The therapy of this disease, which was at first desperate, and could be summed up in baths barren of result, can now be undertaken more confidently and rationally, as the treatment of a chronic intoxication, analogous to alcoholism or morphinism, and scramble by antidotes, when the use of the toxic material has been suspended. These antidotes are probably to be found in arsenic and chlorid of sodium." He recommended a liberal diet, but did not insist on baths.

Almost innumerable drugs have been employed in treatment, as a glance at any modern text-book will show. The tendency now is not to regard any one drug as in any sense a specific, but rather to adopt a symptomatic course of treatment, with an abundant diet of vitamin-containing foods.

In conclusion a few words from the recent workers previously quoted will probably express fairly the status of treatment in this country.

Dr. Goldberger says "While the above recommendations (his Pellagra-Preventing Bill of Fare) have in view primarily pellagra prevention, the same diet serves satisfactorily also in the treatment and cure of the average case. Indeed, for the cure of pellagra the only medicine we have is the diet. The only use that medicines serve in pellagra is the alleviation of painful symptoms and in the treatment of complicating conditions. The vitally important practical thing, however, is that the right kind of diet will keep people from having the disease and will cure those who have it if the cases are not too far advanced."

Dr. Lavinder thinks the treatment "symptomatic and dietetic, the important point being that preventive treatment is far the more satisfactory in its results."

Dr. H. F. Harris writes, "As to treatment it should be just that of any chronic, long-continued affection. Rest in bed, best out of doors, milk and raw eggs until the patient is over the acute attack, and then good food, and continued rest and plenty of sleep. Of course the patient should eat no corn products, but as the poisoning is of a most chronic character he must stay off of such food for a long time before he will notice much results. I have never seen much effects from medicine, except in the way of helping the patient over the rough places."

Dr. J. W. Babcock regards bathing and a liberal diet as two essential factors in treatment. In severe cases he advocates the original Weir-Mitchell rest treatment, as nearly as can be obtained. He regards the putting on of fat as an antidote to the disease, and every effort is made to increase the patient's weight. He believes a neurasthenia to be the underlying nervous condition, and uses remedial measures suited to that condition. He has found calamine, by the way, almost a specific in the treatment of skin lesions.

The object of treatment among modern authorities is as much to prevent the distressing recurrences, as to cure the original attack. And the consensus of opinion seems to be that a properly selected diet will accomplish this to a great extent.

In the above remarks no attempt has been made at completeness of statement as to all the theories of either causes or cures, but only to bring together some of the older views as well as others of recent date.

DISCUSSION:

J. H. Hendren, Louisville: I notice that I am down on the program to discuss a paper on pellagra, but since the paper itself has not been read, and the author is not here, I cannot discuss it. However, I know of no subject which will be discussed at this meeting, and one that I can discuss better than the subject of pellagra, for while I am perfectly aware that I know absolutely nothing about it, I am quite as well aware that you gentlemen of the Kentucky State Medical Association do not know anything about it either. I know of no medical subject which for the past ten or twelve years has been given more discussion, more careful thought, with as little results as the question of pellegra. Not only in Kentucky but throughout the United States, and even in foreign lands this subject has received a good deal of attention. In face, I know of no medical

question which has given so much concern, with so little results, for the past two centuries, as pellagra. We have had our corn doctors and our anti-corn doctors, our Sambonists and our anti-Sambonists, our Goldbergers, and our anti-Goldbergers, and still we are a long way from the home plate.

What is the cause of pellegra? After a careful study of the question for five or six years, with a personal contact and intimate knowledge of more than five hundred cases, I am perfectly frank to say, that I do not know. Dr. Goldberger has evidently done a great work. He has told us much of the truth, but unquestionably he has not told it all. There are many things I would like to discuss along this line, but for want of time and mental capacity and ability, I dare not attempt it.

Sambon was possibly on the right track, but he evidently incriminated the wrong bug. It may yet be proven that pellagra is an insect borne disease, although I am perfectly frank to acknowledge that for the last two years scientific observers have been drifting away from that particular view. We do not know the cause of pellagra. We are just as certain that Sambon missed it as that Dr. Goldberger has missed it in its entirety, and a number of other observers have told us part of the truth but not all.

A few years ago there was a great pellagrous scare that went over the State of Kentucky—a pellagromania, so to speak, and it then took hold of the laity far more so than it did the medical profession.

About six years ago, at the pellagra conference at Corbin, I made the statement that fully fifty per cent. of the cases of pellagra are fatal. Today, after six or seven years of more careful study, I am as firmly convinced that less than five per cent. of the cases of pellagra are fatal **per se.** Seventy-five per cent. of all the cases of pellagra that I have known, have recovered or nearly so; five per cent. certainly not more than ten per cent., have died of the disease, and fifteen or twenty per cent. have died of intercurrent troubles. I know that this statement is going to meet with some opposition. If it does not meet with opposition from the floor of this assembly, it will meet with opposition somewhere else; but unfortunately our statistics on this question as a whole are not reliable because the laity has for some reason unknown to me reached the conclusion that pellagra is a loathsome disease and have listed it in the same category as syphilis and other loathsome diseases. Why that should be I do not know, but the practicing physician catering to that thought has quietly submerged the question of pellagra, and while the death certificate in the great majority of instances is absolutely true as to the cause of death, it does not say the patient did have pellagra in times past. Then we should as physicians of the State of Kentucky and elsewhere educate the people first that pellagra, while it is a disease, is not a loathsome disease, and while it is sometimes fatal, it is not nearly so fatal as certain other diseases.

What is the cure and treatment? There is no treatment. Every case is a law unto itself. I do not know of possibly a single drug in the materia medica that has not been recommended in one way or another for the cure of this disease. Diet is a help, and perhaps a cure, but show me a constitutional trouble of which the same thing cannot be said. But to return just a moment to the mortality of pellagra. There is one class of pellagra patients in which the mortality rate is extremely high, and that class of patients is the alcoholic males. If one of your drunken patients, or alcoholic soaks should develop a case of pellagra, the chances are ninety per cent. he is going to have a funeral at his house. Why this is true I do not know. I have never even seen the reason stated, but I do believe from personal observation that it is a fact.

In the treatment of pellagra I have derived but little benefit from salvarsan and neosalvarsan except in the syphilitic cases in which it unquestionably does produce great results. Tonics are, of course, indicated, but to be perfectly frank with you, and to bring this discussion to a close, I want to say that I do not believe the cure for pellagra is to be found in the materia medica **per se.** I believe that we will find the cure in animal therapy. Personally, I have reasons to believe that the washed blood corpuscles of the rabbit or the sheep, injected into the human blood stream will produce great benefit in these cases, but I have not concluded my experiments along that line, and I am not yet ready to report.

A few years ago I heard an old physician, and one of the best known physicians of southwestern Kentucky, Dr. Burnside, of Barbourville, who hails, by the way from the same town as our distinguished president, Dr. Locke, and our lieutenant-governor, makes a statement which I am going to repeat here. Dr. Burnside in a meeting of this kind made the statement that the best remedy for pellagra is milk—"oceans and oceans of it," to use his expression, and after seven or eight years, of personal contact with four or five hundred cases of this disease in every stage of it, I am perfectly frank with you to say that I myself believe it is the best remedy that the materia medica has yet produced. (Applause).

G. G. Thornton, Lebanon: My experience as compared with the gentleman who has just taken his seat is about as one to one hundred. I have seen in my experience five cases of pellagra, three of which resulted fatally, and two of them seemed to be cured right away. One of the most aggravated cases of pellagra responded very unexpectedly to treatment. In other words, it was a rapid and complete cure. This treatment consisted of seven grains of oxide of bismuth, and three grains of resinol, given before each meal. Her

mouth was cured; her bowels ceased to discharge so frequently, and the eruption on her face and hands and feet were apparently well within three weeks from the beginning of the treatment, notwithstanding this was the second year the attack had shown itself.

In another case I had exhausted about all remedies at my command of which I could think. I began giving five grains of cacodylate of sodium which seemed to have a beneficial effect, and when put on seven and a half grains for a full dose the eruption cleared up entirely. This was given twice a week hypodermatically. I was curious to know whether this eruption on the hands and face would return, and waited and watched, and it did return again this year but three or four doses of seven and a half grains of cacodylate of sodium produced the same effect so far as the disappearance of the eruption is concerned, and the patient now seems entirely well.

I am curious to know how many members who have had experience with cacodylate of sodium have had similar results to my own.

R. H. Cowley, Berea: I have not had any practical experience with pellagra, but I wish to put before you an observation which I think is worth mentioning. This observation was made in Atlanta, Georgia, by a friend of mine, Mr. J. B. Faulkner, who is in charge of tuberculosis work in Georgia. One of their men in connection with the health board went to a family to inoculate them with the typhoid vaccine on account of an epidemic of typhoid that was prevalent. There was an old lady in the family who had a severe attack of pellagra, and he did not feel like giving her typhoid vaccine because he thought it might have a bad effect on her, but she insisted on taking it. After two or three doses she was so much better that she insisted on taking a couple of extra doses, which she did, and at the end of that time she was entirely cured of pellagra. I do not know the name of the doctor who gave the typhoid vaccine, but I know this report is authenthic because I talked with a man myself who tried the same thing, and it seemed so definite in its results that he tried it in a hundred different cases, and in every case he got what appeared to be an entire cure in a short time. I mention this simple observation inasmuch as we do not know much about the disease, for what it is worth, and it may throw some light on the subject.

BRONCHO-PNEUMONIA.

By U. V. Williams, Frankfort.

This is to my conception of a long and varied professional experience, one of the most serious and complicated diseases that the general practitioner has to contend with, especially if his patient is a very young or very old person in whom the resisting powers are at a low ebb as is always the case in either extreme. Pneumonia in its nomenclature, may be considered a modern disease but only in name not in fact; the word pneumonia was not known to the ancients even as modern ancients as the last hundred years. I have a book by Thompson of London, published in 1808, in which all lung troubles are denominated *colds*, which he treats in a very scientific manner and in many respects would bear the criticism of a 20th century up-to-date diagnostician. All such cases were denominated *lung fever*, if of an acute form and if a chronic form *breast complain*, and all phases of tuberculosis and pneumonia were classed under these two terms. Modern scientific differentiation has found lung fever under a score of different names, all presenting very marked different characteristics. The same is true of breast complaints until it is now known that the tubercle bacillus may and does attack every tissue and organ of the human anatomy.

Broncho-pneumonia is an acute infectious, diffuse, pulmonary catarrhal inflammation without a typical hepatization which is characteristic of lobar pneumonia, involving the whole respiratory tract and is of microbic origin. There are 3 special varieties of this disease. The mild lasting from 3 to 12 days, as an ordinary severe cold or persistant grip. The septic form lasting from 3 to 8 weeks and the rapidly fatal form lasting only from 1 to 3 days. In no disease in modern times has the science of medicine and refined diagnosis been so marked and made such vital and wonderful progress as in broncho-pneumonia.

The up-to-date physician is now called upon to differentiate between simple bronchitis, pyothorax, croupal and catarrhal pneumonia pleuro and bronchial pneumonia, abscess of the lung or gangrenous condition, all serious and rapidly fatal. There are no more general diseases now than there was an hundred or a thousand years ago, only we have divided them into numerous groups and named them differently as their peculiarities and effects became better known and experience found they required different management and treatment and this constitutes the great advance in the art and science of curative and preventive medicine.

The U. S. Public Health Service, of the American Health Association, of which Ru-

*Read before the Frankfin County Medical Society.

pert Blue, Surgeon General of the U. S. Navy is chairman, in its report on Vital Statistics, gives a list of 189 accepted causes of death, divided into fourteen classes and we find broncho-pneumonia in class No. 4, under the head of diseases of respiratory organs. Largely over 100 subdivisions of this class are enumerated. Of proncho-pneumonia the subject of this discussion more than a score of which several of the most important have been enumerated as causes of death.

This disease is one of the most serious causes of death in subjects of extreme age, infancy and old age, and the mortality is very high, the reason is that, resisting capacity in these classes is very low, also its wide distribution in the lung tissues and its complication with other diseases that has already lowered vitality.

As regards treatment, the standards are as varied as the subjects and the physician. Personally, I consider no case of pneumonia, properly treated that does not begin with a brisk purge and that preferably a mercurial, at least ten grains to an adult, to which ten grain of quinine is added, and followed by a brisk purge of castor oil and syrup of rhubarb, equal parts. To children, according to age, but at all time effective.

It is well to remember that broncho-pneumonia, of all diseases, runs a high temperature, 104 degrees is regarded as normal for this disease and unless it runs above that(is not cause for especial anxiety.

Antipyretic remedies, especially drugs are not desirable, because they irritate and derange the stomach, good assimulation of food is more desirable than drugs, bathing with tepid bath and intestinal irrigation, beginning with 90 degrees and reducing to 70 is very efficacious, sponging with tepid or cold water, the cold pack and sponging with alcohol and vinegar, ice packs to head, are more to be desired than antipyretic drugs.

Counter irritation applied to the chest, frequently relieves congestion and improves respiration. Counter irritation is best obtained by plasters of one part mustard, four parts flour, applied to chest till redness is pronounced, then removed and repeated several times daily.

Sometimes attention has to be given to the cough, syrupy mixtures should be avoided as they tend to produce flatulence and fermentation of the stomach contents; ammonia in some form is most desirable as it tends to thin the mucous deposit in the bronchial tubes, to which, if much pain, which is not a usual attendant, Dover's powder or codeine may be added.

IS DIGITALIS PERMISSABLE IN THE HYPERÈXIA OF PNEUMONIA?

Whether digitalis exerts a good or a bad influence in pneumonia, is at the present time, according to the best authorities about equally divided, especially whether it should be administered during the febrile stage or not. Brunton denies its value in slowing the heart's action in high temperature. Hare says its characteristic action does not take place in hyperpyrexia. The Rockefeller Institute has investigated in 105 cases and reports 49 cases adversely, while in 56 cases, it did act during the febril cases satisfactorily, with great benefit and life-saving power. Hutchard recommends it in very large doses. While the concensus of opinion is decidedly favorable to the use of digitalis in the form of crystallized digitaline and asserts that it can be given in large doses for months and that it has no cumulative action.

A. S. Boyd and Morris Joseph, Panama, R. P. Journal A. M. A., Aug. 17, 1918), speak of the dangers and disadvantages of intravenous and intramuscular injections of arsphenamin. Seeking, therefore, for a more convenient method and slowed absorption of the drug, they resorted to the intrarectal administration, using for the injections the same preparations as are employed in the intravenous method. The dosage which can be safely given every three days is stated as 0.9 gm. of neo-arsphenamin or 0.6 gm. of arsphnamin for adults and for children, 0.1 gm. for each 25 pounds of body weight. The patient is put to bed and after a cleansing enema, the solution is slowly injected. At first a small number of patients were tried for experimental purposes, but lately, the rectal method was used whenever patints seemed unfitted for intravenous injections. The series is still a small one but in some cases the results were so striking that five cases are reported. In no case was the slightest unpleasant reaction observed whatever brand was used. They conclude as follows: "1. The intrarectal method of treating syphilis and relapsing fever. administration of arsphenamin is a successful 2. The untoward effects are practically eliminated by slower absorption. 3. The untoward effects are practically eliminated by slower absorption. 3. The method reuires no special skill in administration, and can be entrusted to a nurse or to the patient himself. 4. The dosage can be increased by this route and given as often as every three days. 5. It is the method of choice in nervous subjects, in obese or very anemic women, and in children. 6. It offers at least the same curative value as the intravenous route."

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COUNTY SOCIETY REPORTS

Hardin—At a regular meeting of the Hardin County Medical Society the following members were present: Rogers, Strickler, Aud, Layman, Mobley, Stull, Cowherd and McClure.

It being the annual election the following officers were elected: C. Z. Aud, Cecilia, President; F. P. Strickler, Elizabethtown, Vice President; D. E. McClure, Elizabethtown, Secretary and Treasurer.

J. C. Mobley was elected Censor for three years and Dr. English for one year.

F. P. Strickler was elected delegate to the State Meeting and Dr. D. E. McClure, Alternate.

The past year has been an unusually good one for the Society. Practically every eligible doctor in the county was a member, the meetings have been held regularly and the attendance fairly good. The outlook for the coming year is good.

D. E. McCLURE, Secretary.

Harrison—The Harrison County Medical Society held its December meeting at the Elks' Club Room, December 23, 1918. The following members were present: Drs. Smiser, Swinford, McIlwain, W. H. Carr, Wells, Martin, W. B. Moore, Rees Thompson, Wood, McDowell, Blount, N. W. Moore, Givens, Best, Righter, Best, Midden, Renfro and McIntire.

E. S. McIlwain called the meeting to order. The society unanimously voted to pa ythe dues of all its members now in the service of the U. S.

Officers elected for 1919 were: H. C. Blount, Leesburg, President; J. E. Wells, Vice President; W. B. Moore, Cynthiana, Secretary; Treasurer, R. B. Petty, Cynthiana; Treasurer; J. P. Wyles, Censor; W. B. Moore, Delegate.

After the regular session an elaborate lunch was served.

L. S. Givens was selected Toastmaster, and only those who know him can imagine how well he performed that duty. This was one of the jolliest meetings we have had for a long time. The only thought to mar the pleasure of this occasion was that four of our members are still overseas and one, Dr. Booker, has passed to the great beyond since our last meeting.

W. B. MOORE, Secretary.

McCracken—The New McCracken County Medical Society organization is as follows:

W. C. Eubanks, President; C. P. Burnett, Vice President; H. P. Sights, Secretary and Treasurer; C. H. Johnson, Censor; Horace Rivers, Delegate; J. B. Acree, Delegate.

We intend to have a good society this year. They compelled me to take the secretary's place and I am going to work the members to get even.

H. P. SIGHTS, Secretary.

Warren—The Warren County Medical Society held its regular meeting in the City Hall, Wednesday, January 8, 1919. There not being a full attendance the subject of Diphtheria, was postponed until the February meeting.

B. C. Wilson gave a very interesting talk on the Value of the Mayo-Rosenow Vaccine, and a resolution was passed indorsing its use and urging all the doctors in the county to use it for the prevention of influenza and pneumonia.

The society adjourned to meet the second Wednesday in February.

L. H. SOUTH, Secretary.

NEWS ITEMS AND COMMENTS

After having been closed for three months on account of the influenza epidemic, the Trachoma Hospital at Greenville, Ky., is now open for the reception and treatment of patients. This hospital is in charge of Dr. J. C. Johnston, U. S. P. H. S.

BOYS' RESERVE ENROLLMENT WEEK.

Uncle Sam's boys between the ages of 16 and 21 all over the Nation are to be summoned to world-wide relief work during the week of Jan. 20-26. Volunteers are needed on the farms to help plant, tend and harvest the greatest food crop ever produced in the United States. President Wilson has called for enormous supplies for the hungry people of Europe upon the report of Herbert Hoover and his staff of investigators.

Military and civic authorities in Kentucky declare there will be a shortage of farm labor this year. This shortage can be met in a very large way by the boys and the U. S. Department of Labor has chosen the Reserve for this work. Last year several thousand boys in Kentucky were enlisted through the Reserve and gave splendid service.

All boys between the ages of 16 and 21 are entitled to be enrolled. By working 56 days they will receive a bronze badge and be entitled to wear the official uniform; by working 75 days or more they will receive a service bar. Boys who work on the farms of their parents or neighbors are entitled to enroll as well as boys in the cities and towns and receive the rewards for faithful service.

Federal county directors in the State are in charge of the enrollment week.

To the Editor:

Will you kindly call attention in the next issue of your Journal to the fact that Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Department of Labor and Industry, Harrisburg, Pa., is desirous of obtaining a complete list of all physicians engaged in the practice of industrial medicine?

It has been the practice of this Department to hold semi-annual Conferences of Industrial Physicians and Surgeons for several years. These Conferences are well attended, and a great deal of valuable matter is presented in the discussions. In order to reach all physicians interested it is desirable to have their names upon our mailing list. The next Conference will be held early in 1919, and it is, therefore, essential that the names and addresses of all Industrial Physicians and Surgeons be in my hands as soon as possible after January 1st.

During December the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Non-Proprietary Articles—Benzyl Benzoate; Emetine Bismuth Iodide.

Abbott Laboratories—Emetine Bismuth Iodide—Abbott.

Hynson, Westcott and Dunning—Benzyl Benzoate—H. W. and D.; Solution of Benzyl Benzoate, Miscible—H. W. and D.

Merck and Company—Diethylbarbituric Acid—Merck, Diethylbarbituric Acid—Merk Tablets, 5 grains; Sodium Diethylbarbituric Acid—Merck. Sodium Diethylbarbituric Acid—Merck, Tablets, 5 grains.

H. K. Mulford Company—Bismuth Emetine Iodide—Mulford, 8 grains.

E. R. Squibb and Sons—Chlorinated Eucalptol—Squibb.

Takamine Laboratory—Arsaminol: Arsaminol 0.1 Gm. Tubes; Arsaminol 0.2 Gm. Tubes; Arsaminol 0.3 Gm. Tubes; Arsaminol 0.4 Gm. Tubes; Arsaminol 0.5 Gm. Tubes; Arsaminol 0.6 Gm. Tubes.

Major R. W. Ogilvie, M. C., formerly of Princeton, writes requesting that his Journal be mailed to Camp Devens, Ayer, Massachusetts, instead of Camp Upton, N. Y., where he has been stationed for some time. Major Ogilvie has just received a much deserved promotion, and the Journal is sure his many friends in the State will be glad to know about it. He writes "we still have hopes of going either to France or Russia."

Autoserotheraphy in Influenza.—Meille reports favorable experiences with subcutaneous injection of 1 or 2 c.c. of the patient's own serum, taken from the blood drawn twelve hours before and set aside in a slanting test tube. The complications of the influenza did not seem to be modified but the general condition showed marked improvement. Saline infusion proved a useful adjuvant, with venesection unless the heart action was too weak for this.

BOOK REVIEWS

Text Book of Physiology, Seventh Edition,—By W. H. Howell, Ph. D., M. D. S. ed. LLD., Professor of Physiology in the John's Hopkins University, Baltimore, Maryland Published by W. B. Saunders, Company, Philadelphia.

This is one of the very best text books on Physiology on the market. It is revised and brought up to date and contains a full discussion of the subjects, properly embraeed in the scienee as it relates to the human body.

It is profusely illustrated which adds to the interest and value of the work.

Equilibrium and Vertigo—By Isaac H. Jones M. A., M. D., Laryngologist, Philadelphia General Hospital; Instruetor in Neuro-Otology, University of Pennsylvania Medieal School; Major, M. R. C., U. S. Army.

With an analysis of Pathological Cases by Lewis Fisher, M. D. Adopted as standard for Medical Division, Signal Corps, Aviation Section by Surgeon General and Chief Signal Officer, U. S. Army. With 130 illustrations. J. B. Lippincott Company, Publishers, Philadelphia and London. Price $5.00.

Dispensaries, Their Management and Development—A book for Administrators, Public Health Workers, and all interested in Better Medical Service for the People. By Michael M. Davis, Jr., Ph. D., Director of the Boston Dispensary, and Andrew R. Warner, M. D., Superintendent of Lakeside Hospital, Cleveland. The Macmillian Company, 66 Fifth Ave., New York City, Publishers. Price $2.25.

The purpose of this book may be described as threefold.

First, it aims to depict briefly the history and present extent of Dispensaries in the United States. Except in a very slight way, no space is devoted to development in other countries.

Second, it aims to be a handbook of the equipment, organization and daily conduct of Dispensaries, so as to be of practical service to their superintendents, trustees, physicians, nurses and social workers. With this in view, some chapters go into the practical details which people who are working in Dispensaries particularly need to know. The often neglected problems of the small Dispensary have received attention, as well as those of the larger institutions. Section III (pp. 121-281) is mostly of this technical nature, and may be omitted by the general reader.

In the third place the book aims to present the Dispensary as a form of organization for rendering efficient medical service to the people. The Dispensary has generally been regarded as a form of charity. To a large extent existing Dispensaries are that; and worthily so. But the trend of medieal science, and the necessary implications which follow for medical service, create a demand for the practice of medicine through an organized rather than through an individualistic system such as has prevailed in the past. The Dispensary represents an organized system for the practice of medicine in the treatment of patients who are able to go to see the doctor, just as the modern hospital represents the organized praetice of medicine for patients who are sick enough to be in bed. As an institution for rendering efficient medical service to ambulatory patients, the future Dispensary must be so organized as to help the patient without regard to social class, and benefit the medieal profession by rendering the economic position of the average physician more stable and his opportunities for professional advancement larger and more accessible.

Principles and Practices of Obstetrics—By Joseph B. DeLee, A. M., M. D. Professor of Obstretics at the Northwestern University Medical School. Third edition, thoroughly revised. Large octavo of 1089 pages, with 949 illustrations, 187 of them in colors. Philadelphia and London: W. B. Saunders Company. 1918. Cloth, $8.50 net.

This treatise is the outgrowth of a volume, by the author, entitled Notes on Obstetrics, and used for fourteen years as a text-book by the junior and senior classes at the Northwestern University Medical School.

Throughout its pages the author has constantly held in view the needs of the general practitioner and the student. Adequate space has been allowed the purely scientific subjects, and their direct bearing on daily practice has always been clearly emphasized.

Diagnosis has been made a particular feature, and the relations of obstetric conditions and accidents to general medicine, surgery, and the specialties have been fully brought out. Polemic discussion has been studiously avoided, at the risk perhaps, of sometimes being too dogmatic.

In the preparation of the volume the works of the world's greatest authorities and the recent literature have been thoroughly studied, but the opinions expressed are mainly the result of the author's experience in hospital, dispensary, consultation, and private practive. Twenty-one years' experience as a teacher of physicians, students, and nurses is reflected in these pages.

Lengthy bibliographies have been avoided, but sufficient recent references are given to enable the investigator to find all the literature.

For the student, owing to the crowded condition of the modern medical curriculum, brevity and system are essential, and the underlying principles of the art must be brought out. The practitioner needs a wealth of detail and of illustration to tell him what to do in a given case. To accomplish these purposes in a single volume two

sizes of type have been used. Less important matter and details of treatment have been put in smaller type. For the same reasons lengthy descriptions of operations are omitted from the text, and put as full explanatory legends under the illustrations depicting the successive steps of the procedure. By studying the pictures serially, the reader will be better able to follow the operation than by referring to them from a distant text.

The subject matter is divided into four parts: The Physiology of Pregnancy, Labor, and the Puerperium; The Conduct of Pregnancy, Labor, and the Puerperium; The Pathology of Pregnancy, Labor, and the Puerperium; and Operative Obstetrics. Such an arrangement allows the easy division of the subject to fit the usual college curriculum, the Physiology and Conduct of Pregnancy, Labor, and the Puerperium being in the junior year, and the Pathology of Pregnancy, Labor, and the Puerperium, with Operative Obstetrics, in the senior year.

With very few exceptions the illustrations are original, having been drawn under the supervision of the author from fresh specimens, operations on the living and on the manikin, and from original photographs taken by himself. To Bumm's matchless work the author is indebted for many ideas, and for these, as well as for permission to copy some of his plates, the author is profoundly grateful.

James Kelly Parker drew most of the pictures; Grace Amidon did all the microscopic ones; and Hermann Becker, of Baltimore, those of the pelvic floor and the Porro operation. The tireless labor these artists put upon their work, which has extended over a period of eight years, is deeply appreciated.

The material for the illustrations came mainly from the Chicago Lying-in Hospital.

A Manual of Gynecology.—By John Cooke Hirst, M. D., Associate in Gynecology, University of Pennsylvania; Obstetrician and Gynecologist to the Philadelphia General Hospital. 12mo of 466 pages with 175 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth $2.50 net.

The author has attempted in this volume, so far as it is possible to do so on the printed page, to present the arrangement of the subject he has used in teaching during the last twenty years. His aim has been to present the subject concisely, accurately and without unnecessary waste of space.

In several sections, notably those on the injuries of childbirth, their consequences, diseases of the breasts and hemorrhage, he has thought it best to consider the subject from the point of view of both the obstetrician and the gynecologist, as the two are so intimately connected that to present it in any other way would be at the expense of thoroughness and charity.

Throughout the book, an effort has been made to omit unprofitable discussion, and to give to the student, be he graduate or undergraduate, at least one method of treatment which has proven its value, as a basis on which to build as suggested by the individual's own experience.

A special chapter deals with leukorrhea alone, one of the commonest disorders for which a patient consults her physician, and yet one which because it is a symptom and not usually a primary condition, is too frequently passed over in the discussion of its primary cause.

The operation of dilatation and curettage of the uterus—in the author's opinion is one of the most important, because of its supposed minor character—has been given somewhat extended space, being described three times, as its technique varies slightly for different indications.

Pathological Technique—A practical Manual for workers in Pathologic History and Bacteriology. Including Directions for the performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M. D., Associate Professor of Pathology, Harvard Medical School; and J. B. Wright, M. D., Pathologist to the Massachusetts General Hospital. Seventh edition, revised and enlarged. Octavo of 555 pages with 181 illustrations. Philadelphia and London. W. B. Saunders Company, 1918. Cloth, $3.75.

This book is designed for practical use in pathological laboratories, both as a guide to beginners and as a source of reference for the advanced. We believe the book will meet the wants of practitioners who have more or less opportunity to do general pathological work. Many changes have been made in the seventh edition among them the postmortem technique has been put at the end. The revision has been fairly thorough, but not so complete as could be wished for owing to the war.

Of additions, the following deserve mention. Goodpasture's acid polychrome methylene-blue stain for frozen sections of fixed tissues and also for demonstrating metachromatically the different granules in the islet and acinar cells of the pancreas; Graham's oxidase stain for the granules in the myeoblastic series of cells and leukocytes; Benians' Congo red method for the demonstration of spirochetes; Claudius' stain for flagella; and the approved method of classifying pneumococci with reference to serum treatment.

As useful procedures which hitherto have not been generally recognized, attention is called to the use of the safety-razor blade in section cutting, the employment of benzene in paraffin embedding, and Rubaschkin's method of fixing celloidin and frozen sections to the slide for staining.

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EDITORIAL

GREETING.

It is good to be back amongst my old friends working for the people of Kentucky. Blended in my war-time experiences there will always be the regret that I did not get to France and share the experience there of the gallant men of Base Hospital 59 and the other Kentuckians who helped with their very lives to save the world and the gratitude that my training before the war did qualify me in Gen. Gorgas' opinion for the position of Chief Health Officer of the Panama Canal. In many ways this is the finest position a sanitarian may hold. With money only limited by one's needs, with authority in all that affects the health of the people second only to a governor, whose wisdom and experience made him a coadjutor in securing results, with a splendid organization perfected under the master hand of Gen. Gorgas himself and developed under the guidance of his successors, Cols. Howard and Truby, under whose experienced management the camp sanitation of the United States during the war was developed, it has given me a post graduate course, indicating the practicability of sanitation, which I am now delighted to return to Kentucky to share both with those of you who have nobly and bravely served at home and those who responded through the army or navy to the call of our country. At times our personnel was on the verge of total depletion of its older, trained force, and every member of the regular medical corps was ordered away from the Isthmus, but the Surgeon General wisely replaced them with specialists in the various positions whose enthusiasm, industry and devotion to duty made the successful coordination of this work an opportunity and a pleasure. How successfully this was accomplished is indicated by the fact that there were fewer cases of malaria, which is the sanitary index in the tropics, in the entire population of the Canal Zone and its terminal cities of Panama and Colon during the year 1918 than there were in each thousand of its population during each of the first five years of the American occupation, only a little more than a decade ago.

On returning home I find that you who remained have shared with our profession everywhere the control of the gravest epidemic of disease that has swept the world since history has been recorded. In the records of the State Board of Health I find story after story of sacrifice, of strain, of labor, of devotion, frequently of death itself from all over Kentucky, which if done in the lurid light of battle's glare under the discerning eye of some great general would have won promotion, titles, medals and honors, but which I find you mentioning only as a part of the day's work. Whether in camp or cantonment caring for our uniformed heroes or at home trying to make the seemingly endless rounds to give some succor to the stricken myriads your well-done duty has surely earned for you and yours a nation's gratitude and confidence.

With this well-earned confidence which the medical profession has won from its conduct of its part of the war, there comes, too, inevitable, enormously increased responsibility for the people's health in time of peace. The public would not let us, even if we desired it, which we do not, return to the beaten paths which satisfied them and us before the war. Thousands of returning officers and men, equalized as citizens in this greatest of democracies, will demand for themselves and their families the benefits of preventive medicine with which, in its broadest sense, they have become familiar, and will demand that the endemic pestilences, which have heretofore become so familiar that we have merely given kindly custodial care to those suffering, and mayhap, dying with them, be rapidly eliminated.

Fortunately this demand on the medical profession of Kentucky coincides with the

splendid opportunities opened up for a practical response to it in the reorganization of the health activities of the State made possible by the really excellent legislation of 1918 as modified by the enlightened decisions of the Court of Appeals, to the details of which we have frequently, heretofore referred.

Unified as never before, not only the splendidly compact organization of the medical profession of the State but all of its allied agencies which have assumed *quasi* health functions during the war, including the Red Cross, the Federated Women's Clubs, the public health nurses, the great insurance companies, the employers of labor, the labor unions, the fraternal orders, the farmers organizations—all these have shown by their really wonderful co-operation during the trying restrictions of the recent influenza epidemic a degree of intelligent understanding of sanitary necessity and respect for organized and intelligently controlled sanitary authority that makes it highly probable that another generation of politicians must arise before any coterie of them, however selfish, venal and desperate, attempts to stem the tide of sanitary evolution by making the health organization of the State one of the tools of a designing clique. We have a great health machine composed of republicans, of democrats—of every element of its citizenship which really loves Kentucky and it is impregnable as long as it unitedly, efficiently functionates for the betterment of every citizen of Kentucky and preserves that aloofness from partisan politics which is essential to the character of its service.

Arthur T. McCormack.

A PLEA FOR GREATER HARMONY IN THE PROFESSION EVERYWHERE.

Most people are attached to their family physician but do not often think or speak kindly of other members of the profession. It is but fair play to say that this is largely a reflection of the way a majority of the physicians of the old school of the same community spoke of and treated each other. The profession came to recognize the enormity of this evil and the disaster it had brought upon the people and themselves a few years ago, and in most counties it has become one of the most harmonious of the vocations; but the effect of this change has only reached the more intelligent classes, and while the individual doctor stands high with a few people—his patrons—the profession as a whole ranks low in public esteem. As a matter of fact, ours is the only vocation organized and working systematically against its own interests. In so far as it succeeds in preventing tuberculosis, typhoid fever and similar diseases it diminishes the incomes of its members. It does this because ours is essentially a humanitarian calling, in constant touch with sickness, suffering and death, and that it has been found far easier and safer to prevent than to try to cure these diseases. For much the same reason physicians do more charity every day in every year than all other vocations combined, and never take out a patent on a new remedy or any instrument invented. These things explain in part why the average income of the physicians of Kentucky is less than $1.200. It is important that the officials and people be informed of these facts that a misconception of the purpose of the profession in health work may not obstruct these most unselfish efforts.

To meet and overcome prejudices and objections which have so crippled the usefulness of the profession, and which have proven so disastrous to the interests of the people in all the past, and are not only woven into the very fabric of the government, but into the habits of thought and life of the people whose protection is sought, is no ordinary problem. Legislation, however complete, and appropriations, however large, have little more than an educational value except as they are supported by an intelligent public sentiment. In order to develop and foster such a sentiment mainly, the medical profession of Kentucky and of the entire country, through a system of local societies extending into every county, and to which are cordially invited the doctors of every school of practice, has enlisted and, in a carefully planned and systematic way, begun a campaign of education with the view of enlisting the lay leaders of public opinion of every community in this altruistic reform. By means of a well devised post graduate course of study for county societies, with frequent meetings and attractive rewards for those who complete the four years' work, outlined and furnished gratuitously to all who will accept, it is proposed to place the incentives and facilities for study within the reach of the profession of every county, with the purpose of placing a competent, up-to-date doctor within reach of every family in Kentucky and in the United States.

In addition, it is advised that these county societies or schools hold frequent joint meetings with local organizations of teachers, editors, ministers, druggists, women's clubs, lawyers, farmers, laboring men and other similar bodies which lead and mould public opinion, with the view of such a comparison of views, study and practical instruction as will shape and promote this reform. In time, through the cooperation of the teachers and others, by means of stereopticon and other

demonstrations, it is hoped that every school and ultimately every child and home, may be reached by this health and life-saving instruction. Such demonstrations should always include views of schoolhouses and homes, humble and elaborate, which are models in location and grounds, architecture, ventilation, drainage, heating, lighting and water supply, as being no less important than the germs which are the direct causes of the preventable diseases. If this is done for a few years it will be easy to have voters, legislators, executives and county and city officials in the next generation about whose active support and cooperation there will be no question.

As will be readily seen, what is here proposed means the same revolution in the practice of medicine which has gone on so rapidly in the practice of law in recent years. A generation ago lawyers were employed almost entirely in preparing for and in conducting litigation in the courts. Now, corporations and wise business men employ lawyers mainly to keep them out of the courts, and the number and character of the profession thus engaged is much higher year by year. In the same way it is only a question of time until a large part of the medical profession is to be employed as medical advisors for families to tell them how to live so as to keep well instead of the much more doubtful and difficult work, as family physicians, of trying to cure them after they are sick. All sickness can not be prevented with present knowledge, but what are very properly known as the domestic pestilences, including those especially dangerous to children and young people, can and ought to be prevented, and this list should and will be constantly extended by such experimental research work and collective investigation as every State and the National Government will undertake, when a real wise statesmanship is substituted for the time-serving personal and political methods which were probably unavoidable in a new country like ours. It will require years of consecrated, unselfish labor upon the part of the medical profession and of such laymen as may be induced to enlist in it, often in the face of misrepresentation and derision from those to be most directly benefited, before the success of the movement is assured. How doctors are to be compensated and supported, and whether as many will be needed under the new order of things, we have not stopped to inquire. They have the knowledge which not only qualifies them for, but which imposes the duty of leadership. It opens up a new field of unlimited possibilities, one which will make the profession of the future a hundred fold more important than that of to-day, and we only appeal for such harmony in our own ranks and such popular and financial support in every county as will hasten its practical application to every community and home in Kentucky.

PNEUMONIA—PREVENTION VERSUS CURE.

It is lamentable that among the rapid strides made in general medicine during the past ten years, little if any progress has been made in the treatment of pneumonia, except in Type I,; hence the minds of the profession have turned toward preventive measures.

The recent wide spread pandemic of influenza with the appalling incidence of complicating pneumonia and the excessively high mortality resulting from these pneumonias regardless of the most scientific and careful treatment has in a very large measure further emphasized the futility of curative measures with present knowledge and stimulated a widely progressive movement looking to prevention as the real solution of the problem.

It has been proven over and over again during the influenza epidemic in Kentucky, and other states as well, that the incidence of pneumonia among those inoculated was practically nil.

Due to the foresight of the State Board of Health and its aggressive efforts in bringing about thousands of inoculations in the State, Kentucky doctors have ample and almost conclusive evidence on every hand of the value of these inoculations as a prophylactic against pneumonia.

While the Kentucky State Board of Health was a pioneer in a sense in urging the inoculations on a large scale, it is gratifying to note that other states have followed its lead to an extent that preventive inoculations against pneumonia have passed the experimental stage and is beginning to be recognized by many as an accomplished fact.

In this connection a recent report from one of the large Army Camps, Camp Dix, New Jersey, cites the fact of an incidence of only one case of pneumonia among 17,407 soldiers who had been inoculated.

For the benefit of the people and the profession of the State a large quantity of vaccine is kept on hand at the State Laboratory at Bowling Green, for free distribution so that every physician may be able to give his clientele the benefit of these inoculations. Already 500,000 doses have been sent out and the demand for it is steadily increasing.

SCIENTIFIC EDITORIALS

WE MUST BE READY.

Now is the winter of our discontent,
Made glorious summer by this sun of York;
And all the clouds, that lower'd upon our house,
In the deep bosom of the ocean buried.
Now are our brows bound with victorious wreaths;
Our bruised arms hung up for monuments;
Our stern alarums changed to merry meetings,
Our dreadful marches to delightful measures
Grim visaged war hath smooth'd his wrinkled front.

—(Shakespeare; Richard II. Scene 1, Page 1.)

So spoke the Duke of Gloucester and through his prophetic words we speak again. The War is over and we must again re-adapt ourselves to new environments for "the old order changeth." Never again will the world be the same, never again will we have the *good old times* "befo' the war". This change will in a marked degree affect the medical profession and as we see it psychologically the profession must rise from its cold ashes in a Phoenix-like manner and take on a new and rejuvenated state. The days of autocracy are gone; the days of Democracy are here. To-day as never before in the history of the world the plain people rule. Autocracies in medicine that were big and autocracies that were and are small *must* go and in their place a broadened, enlightened, medical profession must take its place. Many of the rules of guidance and basic of our conduct are preforce going to be swept aside and let us hope that when this day comes we will be prepared medically, ethically, spiritually to meet the issues, to rise to the higher call of greater freedom for the fraternity and a privileged individualism to which we have been strangers. Let us hope and pray that in the readjustment and reconstruction of our country, her industries and her sciences that we may play our part, humble or great, in manner that will bring to us not only our material advancement, but a spiritual expansion that shall make of us better citizens and best of all better Americans. And let us thank God on bended knee for our present position. Let us reaffirm our belief in the beneficence of an all wise Providence, resting securely in the faith that God Almighty never intended to bring humanity to their present enlightened position and then place upon their wrists the clanking chains of slavery and permit them to be trampled under the iron heel of a domineering and war-crazed Autocracy. Let us live confident and trustful that wherever Americans are to be found in this broad land of ours that over them will always wave untouched, untarnished and undefeated, the greatest emblem of the rights and liberties of men, the Stars and Stripes, our sacred and doubly blessed, red, white and blue.

CURRAN POPE.

OFFICIAL ANNOUNCEMENTS

REPLY TO SCIENTIFIC EDITORIAL ABOUT VENEREAL DISEASES IN THE FEBRUARY JOURNAL, BY THE HEALTH OFFICER OF JEFFERSON COUNTY.

In the February issue of the KENTUCKY STATE MEDICAL JOURNAL appears a lengthy editorial from Dr. M. L. Ravitch and Dr. S. A. Steinberg; in which they, after rehearsing the history of prostitution as recorded in several ancient and modern works on the subject, (all of which is easily accessible to any one who chooses to study the history of prostitution), makes some learned (?) observation. Their comments on the local efforts to suppress prostitution and limit the propagation of venereal infections are both misleading and untrue. To quote from the editorial:

> Stimulated by the war camp activities in the work of prophylaxis of venereal diseases, the Churchmen's Federation of Louisville, an unscientific and ill organized body, has rather exceeded its authority in putting suspects in the local jail for treatment. We have watched the doings of the Federation since it was established and it looks to us as ridiculous as it is vicious; it is as unlawful as it is unjust; it is as unscientific as it is prejudiced. Of course with such procedures and measures adapted, favoritism, bribery, blackmail are bound to follow. Forceful and unscientific measures of checking venereal diseases has always proved to be a failure. We do not deny that our boys in the camps had to be protected, but work done in the manner of the local Federation will never accomplish anything. Methods based on reliable statistics and extensive experienced, methods worked out by scientific physicians and sanitarians will be far more practical than hysterical performances of a self styled purity committee.

Be it positively understood that the Churchmen's Federation of Louisville, which they choose to style an unscientific and ill-organized body, have nothing in the world to do with quarantining diseases. The authority under

which we are quarantining is contained in what is known as the ten venereal rules, promulgated by the three Surgeons General: namely the Surgeon General of the United States Public Health Service, the Surgeon General of the Army, and the Surgeon General of the Navy, which rules were adopted by the Kentucky State Board of Health, the Jefferson County Board of Health, and enacted into an ordinance by the municipal council of Louisville. It would seem then that our learned friends are not at all acquainted with the methods of procedure and have made no efforts to make themselves informed.

The rules as adopted authorizes only three officials with the power of quarantining, the Secretary of the State Board of Health, the County Health Officer, and the City Health Officer, and gives to them the power to designate the area of quarantine. Up to the present time, not a single individual has been quarantined except upon my authority, I being the Health Officer of Jefferson County, and only those have been held in quarantine who were afflicted with communicable forms of the three venereal diseases; moreover, not one has been held in quarantine whose condition in life was not improved, for they have been well treated, well fed, and well nursed. Our friends fear very much that such procedures and measures are conducive to favoritism, blackmail and bribery. This is rather severe language and surely is very un-complimentary to say the least. I have never in my life been accused of bribery or blackmail, and if the Doctor was so fearful of my honesty in carrying out what is prescribed by law to be my duty, and which I regard as a very sacred and patriotic task, he could have ascertained if I, or any of my subordinates were approachable by doing a little detective work. They criticise our efforts to check venereal diseases as forceful and unscientific. Now neither Dr. Ravitch nor Dr. S. A. Steinberg know anything about the methods in vogue, and their reference to these historical performances, etc., are made without knowledge of the facts. I wonder if the Doctor could be jealous over the loss of business.

If they will take the trouble to read the December issue of the Social Hygiene Monthly as published by the war department commission on training camp activities and the United States Public Health Service, they will find this statement.

> "The Federal Government has pledged its word that as far as care and vigilance can accomplish the result, the men committed to its charge will be returned to the homes and communities that so generously gave them with no scars except those won in honorable conflict." THESE WERE THE WORDS OF PRESIDENT WILSON.

Since the beginning of the period of the mobilization of the armed forces the government has carried out a program for combating prostitution and venereal disease without parallel in any other country.

Our friends say that they have watched the doings of the federation since it was established. Now if they have watched anything at all, surely they have done it from "afar off."

We have three quarantine stations in use at present, the County Jail, the upper part of which was very generously converted by the Commissioners of Jefferson County into a dormatory for women.

The Union Gospel Mission on Jefferson Street, having equipped the upper floor of their building at an expense of about $600.00.

The City Work House, used for the quarantining of colored people as a matter of necessity, as no other arrangements could be made for them.

To my knowledge, neither Dr. Ravitch nor Dr. Steinberg have on a single occasion visited any one of these quarantine stations or asked for any information concerning them. I presume that they are not even aware that the Federal government has made an allowance of $2,500.00 per month for the maintenance of quarantine women, and in addition, furnishing all necessary medical supplies, and paying the Doctors to do the work. The Red Cross organization furnishes the nurses for carrying out the treatment.

I feel very much disappointed that our learned friends display so much ignorance about the efforts being made to emancipate us from the ravages of gonorrhea and syphilis.

Editorials are appearing constantly from them, (they have a penchant for getting into print), and as so many false statements are incorporated into the present editorial, how can they expect any one to regard as true, anything they write. If our friends will accept a little advice, we would say to them a little more work and a little less talk, and before they attempt to write any more editorials criticising those who are making a conscientious effort in this great work, that they will at least ask for some information, and not turn their guns without knowing where they are going to shoot.

C. H. Harris.

Foreign Body in the Knee.—The knee was bent in irreducible contracture and this and recurring hydrarthrosis were explained by a minute shadow of a scrap of shell at the median posterior part of the joint, at the upper part of the anterior aspect of the crossed ligaments.

ORIGINAL ARTICLES

MEDICAL SYMPOSIUM

CHRONIC INTERSTITIAL NEPHRITIS.*

By F. H. CLARKE, Lexington.

For convenience of discussion chronic interstitial nephritis will be considered in three groups, following the division or classification of Herrick: Primary, secondary, and arteriosclerosic. I shall not, however, in this brief consideration of the causes of this form of nephritis confine myself to each form or division separately, or in order.

Indeed the dividing lines are often by no means clear or easily established clinically, even post mortem findings may fail to show them plainly. So true is this that some authorities deny the existence of distinct forms of nephritis, contending the apparent different types are only different stages and developments of one disease, modified by certain causal and developmental factors. Some would even do away with distinction between acute and chronic nephritis except as one is simply and always a sequel or development of the other. This is certainly true of some cases of the secondary type, and there are cases in which the nephritis is apparently interstitial from the beginning, and yet so abrupt in its onset and rapid in development as to justify the term, acute.

When one considers etiology alone, the confusions of forms and types are even greater. A review of the causes given in the text-books of the different forms of nephritis at once reveals the same agents under all the divisions. What is even more significant is the fact that in many cases no single cause can be named. This can only mean, either that we do not know the cause, or that more than one factor is involved.

Going back to Herrick's division: primary chronic interstitial nephritis is that form which does not follow, or develop from a parenchymatous nephritis. This is the type we usually speak of as contracted kidney. The secondary type is that which does not grow out of a parenchymatous disease process. The arteriosclerotic division includes all those cases in which the pathological condition is but a part of general arteriosclerosis involving chiefly the interstitial tissues of the kidneys.

I believe all clinicians will agree with Rosenstein that for the great majority of cases of primary chronic interstitial nephritis, the genuine contracted kidney, we know no cause. Heredity and age doubtless play a prominent part. There is a considerable evidence of hereditary tendency, or susceptibility to kidney disease. I believe I have noticed this in my own experience. It is perhaps an inherent weakness of those organs which makes them more susceptible, or less resistent to the causes to which all are more or less exposed.

Primary interstitial nephritis is chiefly a disease of the latter half of life. The great majority of cases occur after forty; yet it does appear earlier, sometimes much earlier in life. I have never recognized a case of this form in a child, but a number of authorities have reported cases in children—even in infants. Weigert and Hellendahl speak of congenital contracted kidney. Probably as noted by Sutherland and Walker, most cases in infants are due to inherited syphilis.

It is generally conceded that the active cause or causes of chronic nephritis are in the blood. That the blood contains the toxic material which in favorable conditions produce the morbid changes in the kidneys. Probably the same toxic agents when present in the blood in large quantities may produce a rapid and severe toxemia which in turn ends in acute inflammation, in less quantity and acting slowly may bring about the condition which we recognize as chronic, gradually and without the acute stage. Brault evidently has this process in mind in writing of chronic interstitial nephritis as "nephritis by slow intoxication." Acute infectious disease which so often cause acute nephritis may act in this way in producing the chronic forms. This is especially true of chronic parenchymatous nephritis and of that type of chronic interstitial disease secondary to it; but chronic primary interstitial nephritis may develop in the same way.

Aside from its hereditary influence already mentioned, I believe syphilis does not often have an active part in causing contracted kidney directly. Its well known influence and poteney in arteriosclerosis makes it prominent in the related type of nephritis, but the other forms are rarely directly produced by it. The greater tendency to other tissues of syphilis probably accounts for this. The reason for this predelection we do not know any more than we know why in alcoholic neuritis foot drop occurs, while in lead poisoning the nerves supplying the extensors of the forearm are attacked; but the fact remains and is familiar to us. Two Japanese observers, Yon and Wataki found many spirochetes in hyaline casts, and in the hyaline substance and tubules of the kidney, but none were found in interstitial tissues.

Gout is said to be a common cause of

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chronic interstitial nephritis. In my experience gout is comparatively a rare disease in this country, especially the articular form. It may be that the same toxic agents which in England make the typical form of gout common in this country manifest themselves through the kidneys without involving the joints.

Lead poisoning is another cause of chronic nephritis. Some writers consider the contracted kidneys occuring in chronic lead poisoning as secondary to the so-called "lead gout." The late Dr. Forman believed that nearly all subjects of lead poisoning had chronic nephritis and that a peculiar type was produced by it.

The place of alcohol in the production of chronic interstitial nephritis has been much debated. Most late authorities agree in giving it an important and primary role in its production, while others insist it is chiefly secondary; that most users of alcohol are also excessive consumers of proteids, and that it is either the latter or the two combined that is responsible for the production of the disease.

The relation of chemical poisons with chronic nephritis raises an interesting question. Does the large use of arsenic and mercury in the treatment of syphilis ever produce nephritis? Of course the relation of syphilis to chronic nephritis already mentioned complicates this question. My own experience in the treatment of syphilis is very limited, but I have seen a number of cases of poisoning by mercuric bichlorid in recent years; all of these had a severe nephritis and all but one died from that cause. One case recovered after an exceedingly severe gastro-enteritis and nephritis. The subject, a middle-aged woman, three years after her experience is apparently quite well and shows no evidence of nephritis or cardio-renal-vascular disease.

I have been for the most part considering the etiology of primary interstitial nephritis. The causes of the secondary type, that form which is a sequel, or terminal stage of chronic parenchymatous nephritis are of course primarily all causes which ordinarily produce chronic parenchymatous nephritis—plus agents or conditions which produce fibrosis, either general, as in the arteriosclerotic type, or local as in the primary contracted kidney. Here the acute infectious diseases play a more important part probably than in the primary type. The toxemia of pregnancy may continue until a chronic parenchymotous nephritis is produced, which may end in the interstitial form. Of acute infections causing nephritis, the eruptive fevers are the most frequent; scarlet fever, as is well known being oftenest in evidence. Doubtless many cases of nephritic, acute and chronic, have been preceded by a mild infection which has passed unnoticed, or has not been seriously considered in relation to the subsequent more serious kidney disease.

Imperfect digestion and faulty metabolism; that somewhat vague result of these which we often refer to as autointoxication, undoubtedly has much to do with the causation of all forms of chronic nephritis. With this may be classed chronic constipation.

The etiology of the arteriosclerotic type of nephritis is even more complex than that of the other forms discussed. Heredity has a more important place. The recognized fact that longevity is characteristic in certain families finds its chief explanation in the transmission of sound cardio-renal vascular apparatus. It is illustrated in the German aphorism; "a man is as old as his arteries." I know three sisters, the youngest eighty-five and the oldest past ninety. The younger recovered from an operation for appendicitis when she was eighty and the oldest overcame a severe pneumonia when nearly eighty-five.

Given an inheritance the opposite of this, nephropathic, cardiopathic, or the two combined with unhealthy arterial tendency and there is a condition in which any, or several of the etiological factors already discussed may readily produce arteriosclerosis renal, cardiac, and vascular disease.

Alcohol and syphilis are probably oftener and more directly connected with the arteriosclerotic type of chronic interstitial nephritis than in other forms. Excessive muscular work, especially when associated with the excessive consumption of proteins has long been regarded as a prime factor in general arteriosclerosis and they doubtless operate in the same way to produce the same condition in the kidneys.

Severe and prolonged nervous and mental strain are important causes to be taken into consideration. In considering these one is reminded of Jeliff's definition of an organ: "Structuralized experience." While there can be little doubt that what we designate as worry, anxiety and nervousness are often active causes, the fact they may be also results of physical conditions should not be lost sight of.

No discussion of the causes of interstitial nephritis, arteriosclerosis or blood pressure, is complete without the consideration of the endocrine glandular system. The familiar action upon blood pressure of supra renal-glandular secretion would direct attention to the influence of these, but there is some evidence that other glands of this system are involved. Some modern authorities go so far as to class many chronic vascular, and secondary renal and cardiac disturbances as pure endocrinop-

thies. A recent writer sums up the requirements for a healthy vaseular system, "good tubing and sound endoerine glands" to start with. Granting that the glands of internal secretion do play the important role ascribed to them by these writers, the question arises, whether disturbances of these glands is the real or primary cause, or are they simply the means or channels through which the causes we have been considering operate. Here again we are also confronted with the question of cause and effect.

I have not tried to explain the mechanism or mode of action in ehronic interstitial nephritis by which high blood pressure is produeed. Accepting the faet that it is perhaps always associated with that and allied diseases, certainly at some stage, I have left that special phase of the subject tc those who are to follow. There is however, no doubt in my mind that while several mechanical conditions operate in the production of high arterial tension, the primary and essential eause is, toxemia.

CARDIOVASCULAR CHANGES IN CHRONIC INTERSTITIAL NEPHRITIS.*

By B. C. Frazier, Louisville.

When heart and vessel changes begin in chronie interstitial nephritis is most frequently unknown though it is of extreme importance to differentiate between a primary eardiac disease with secondary renal involvement or primary chronie nephritis with seeondary eardiovascular changes. Often eardiovaseular changes are not observed for a good period after persistent albuminuria. It is of special importance in chronic or even acute albuminuria to look out for vascular changes, especially in the middle-aged and elderly, noting most carefully the blood pressure changes, only by the use of a sphygmomanometer, because one cannot depend on the feel of a peripheral vessel. Cardiovascular changes in nephritis are of as much importance as the study of the urine from a diagnostic point. It is very difficult, especially when a physician sees a chronic interstitial nephritis case in the late stages, to know if it is primarily heart or kidney. Inerease of heart size varies from slight enlargement to that of being truly "bovine." Enlargement of left ventricle mainly with apex displacement downward and to the left. Later, often enlargement of the right ventricle, cardiac hypertrophy, apex impulse diffused and heaving; often rather strong. More advanced cases, presystolie murmur is often present. Peripheral vessels show changes, being hard to the feel and tortuons. Some one has said that a tortuous and plainly visible temporal artery is a good hint to underlying renal disease. Blood pressure is increased and tension is high. The sphygmomanometer often reveals systolic pressure of 170 m.m. hg., often going higher, 200 m.m. hg. not being unusual even in people who are still attending to affairs and whose appearance is not that of a siek person. A blood-pressure instrument is not only of importance as to the recording of primary blood pressure as an assistant in diagnosis but it is also most important in recording daily or weekly pressures during treatment, noting results of medication or diet. Sphygmographic tracings are frequently helpful also in determining in later stages the failure of compensation. With a failure of the heart there is naturally a fall in blood pressure and the pulse will be smaller and is frequently irregular. Among evidences of high blood pressure can be mentioned headache, dizziness and hemorrhages, either from the nose or other mucous membranes, and occasionally small vessels sub-dermal.

Many of the phenomena of chronie interstitial nephritis are explained by uremia. These toxic symptoms may be mild and of long standing, chronic uremia, or they may be of sudden onset, the severe headaehe and convulsion coming without warning, frequently followed by fatal coma, acute uremia. One hardly knows where to begin a description of complicated nephritis and chronic vascular changes, for physicians see these cases first in all stages, so it is depending upon the stage in which we first find these cases as to the beginning of description of said case. They may eome because of rundown condition, loss of weight, tired feeling, frequently because their friends insist they look badly and should consult their medical adviser. Inspection, observation is very frequently all that is necessary to make one suspect at least some malignancy or a chronic and rapidly developing nephritis with vascular changes that are so depleting. A person above forty presenting with shortness of breath, loss of weight, high blood pressure, uneasy in appearance, at once necessitates laboratory assistance and the necessity also of blood-pressure taking to differentiate between malignancy perhaps and a chronic nephritis. It is not unusual, however, on the other hand, to have patients under your observation for years with mild evidenee of nephritis, still showing a well preserved outward appearanee of health, good peripheral color, with firm musculature, springy step and active mentality, frequently quite well nourished. I have had praetically no experienee in the laboratory findings of

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blood in these cases. The blood shows an anaemia of the secondary type and the hemoglobin is often reduced, perhaps as low as to 60 per cent.

I want to report briefly one or two cases, both being in women, although it has been my observation that men are more subject to chronic interstitial nephritis with vascular changes than are women—the cause it is not my right to discuss.

Mrs. F., age 50, robust in appearance in the last few years, in early life was supposed to be possibly tubercular. First intimation of trouble was severe nasal hemorrhage necessitating packing. Blood pressure over 200, with small amount of albumin present and a few hyaline casts. She was a large eater especially of proteids, drank black coffee to excess and took more alcohol than was good for her. The withdrawal of proteids, cutting down the coffee to moderation and the withdrawal of alcohol, she has been kept quite comfortable for three years, with a blood pressure frequently as low as 160. She has had only one to two slight hemorrhages but her peripheral vessels show very plainly and especially her temporal artery. She continues highly nervous and flushes easily, enough to be embarrassing.

One other case has been rather unique and atypical in that the very great severity of symptoms that have been present from time to time she has continued to live. Mrs. S., age 58, with a negative family history, enjoyed perfect health up to 1915, when her husband was taken sick with nephritis and was practically an invalid for a year and a half, dying with all the terminal symptoms of cardiovascular changes, including hemiplegia. About six months after his death, with only a very few premonitory symptoms she was seized with a uraemic convulsion and was unconscious for several days. By severe purging and rest she recovered from this attack, running a small amount of albumin for several months without any other special symptoms referable to the kidney and none otherwise. Seven months after her primary uraemic convulsion, while visiting in Chicago she was seized with a second convulsion coming on very much like the first, with very little warning. During that time she was unconscious for several days and the history goes that she had almost a total suppression of urine for over forty-eight hours, with respiration as low as six per minute. She came through that attack and returned to Louisville, to be seized by a third attack three months subsequently. This time she came under my observation while she was in coma just after the convulsive seizure had quieted. Pulse irregular, very full and bounding, systolic pressure so high that my instrument would not record it over 265 m.m. hg. A few hours after the convulsion she came to partial consciousness, was delirious for days thereafter; thick of speech and hemoplegic, pupils unequal and responded very sluggishly to light; later relapsing into coma and her respiration became as low as two per minute. After the first twenty-four hours urinary secretion was not over four ounces in twenty-four hours. This persisted more or less severely for two weeks. At the end of the third week was taken from the hospital with fair digestion, urinary output of 40 ounces per day, with slight amount of albumin and a few casts. I omitted to say that the first catheterized specimen obtained after this convulsion showed solid albumin on boiling and appeared just as though the albumin of an egg had been boiled. The second specimen I had a chemical and microscopical report and this showed casts as well as a great deal of blood. The seizure for which I was called occurred in February of this year. She had not had any more convulsions but at times urine had been scanty with a considerable amount of albumin. Her eyesight is almost totally destroyed, her mentality is below par and at times she appears to have real insanity of confusional type. Her nutrition has been pretty well maintained. Blood pressure often as low as 160-170 m.m. hg. She had not had any dropsy to speak of, only slight swelling of eyes. Feet and ankles have never been swollen and she has had few digestive symptoms, though her diet of course has been very simple.

THE SYMPTOM COMPLEX OF CHRONIC INTERSTITIAL NEPHRITIS.*

By R. Hayes Davis, Louisville.

The symptoms of this disease are so varied and present so many combinations that it is difficult or impossible to describe a perfectly typical case. The condition is a slow one usually requiring some years to run its course, and the onset is very likely to be insidious. The patient may develop a few indefinite symptoms and seek advice because he is weak or has headache or slight dizziness or indefinite digestive disturbances, or his first intimation that he is not well may be a hemorrhage or cardiac dilatation or uremia. Quite frequently the attention is first called to the pathological kidneys by a routine urine examination or by a life insurance company.

The involvement of the kidneys with chronic interstitial inflammation is soon followed by pathological changes in the arteries and heart, and among the most important symptoms of interstitial nephritis are those due to

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the cardio-vascular system. The other symptom complex that is most striking is the large group of toxic symptoms due to the retention in the blood of poison that should be eliminated, which condition is known as uremia. I shall attempt to describe these large and important groups in some detail and then I shall take up hurriedly the special symptoms referable to certain organs.

In the early part of the disease the only changes noted are an increase in blood pressure and hypertrophy of the heart at first of the left ventricle. The extent of these changes is variable. The blood pressure may be nearly normal or only slightly elevated or may be quite high, and the heart shows hypertrophy varying from only a slight enlargement with an increase of the first sound and a slight accentuation of the aortic sound to an actual ox-heart. As the disease advances these changes gradually become more marked, and if the patient is one destined to progress along the cardiac route he will sooner or later develop the symptoms of dilatation which occur as a result of an overworked heart muscle degenerated on account of coronary sclerosis and fatigue from its efforts to force its blood through inelastic arteries against a high blood pressure, or handicapped by diseased valves. The symptoms of dilatation progress from slight irregularities, and dyspnea on exertion with dizziness and digestive disturbances, etc., to the extreme forms of cardiac failure with marked dyspnea, weak heart, edema, and all the other distressing symptoms so easily recognized by those familiar with loss of cardiac force. The changes in the cardio-vascular system are discussed more fully in another paper in this symposium so I shall not dwell on them in greater length.

I shall now take up the subject of uremia which is equally as important as the cardio-vascular changes. Uremia may manifest itself as a chronic form of intoxication or as an acute overwhelming toxemia. The so-called chronic form of uremia are most numerous. Perhaps the most frequent symptom is headache. This may be slight or may be very intense and may in some cases resemble migraine. Chronic headaches beginning in individuals past middle life or migraine attacks that grow worse instead of better should be looked upon with suspicion. Digestive disturbances are frequent and manifest themselves as nausea, loss of appetite, and often occur and are a result of the toxemia on the mucosa of the gastro-intestinal tract or are due to an actual catarrhal inflammation. Certain symptoms like vomiting may be typically centric in origin and may resemble the vomiting of brain tumor. Hiccough is not infrequent and at times is very distressing. Stomatitis is not unusual. The effect of uremia on the respiratory tract is often to cause a severe asthmatic condition. This dyspnea usually resembles ordinary bronchial asthma and the attacks are more frequent in the night. Attacks of dyspnea, however, often occur as a result of cardiac dilatation in those who are not uremic. Irregularities in the breathing are frequent and especially the Cheyne Stokes respiration. This peculiar type of breathing may occur as a forerunner of death in the deeply comatosed patient or it may be a symptom in the absence of other uremic manifestations. Very important are the effects of uremia on the nervous systems. The headaches have been described. Dizziness is frequent. Nephrities are often irritable and morose. They can not concentrate well in their mental work and they suffer with brain fatigue after slight efforts. They are often sleepless and restless or may be drowsy and sleep in the day time. They may have outbreaks of delirium or even mania, usually late in the disease, or rarely they develop delusional insanity. All their mental faculties may gradually fail to a degree of dementia. There may be attacks of stupor and convulsions or actual coma. They often have various neuralgias and attacks of low grade neuritis. The eye changes are very important. There may exist attacks of transient blindness lasting from a minute or two to several hours. Double vision may occur or limitation in the field. There may be bluriness or indistinct outline on trying to observe objects. Then in quite a proportion of cases actual retinitis or optic neuritis occurs and is usually a very late symptom. Various forms of transient paralysis often occur involving the face or speech or one or more extremities. They are usually of very short duration and can be differentiated from a hemorrhage.

The more acute symptoms of uremia manifest themselves either very suddenly or more gradually with intense headache, great restlessness, delirium, stupor, and coma, and often generalized convulsions occur. Frequent convulsions and deep coma are the most unfavorable symptoms.

The involvement of other organs that occurs as a part of the symptom complex is of secondary importance to the cardio-vascular system and uremic symptoms.

Nosebleed is not infrequent and is usually a result of the high blood pressure. It is of varying intensity but may be very serious.

The skin is usually dry. It is sallow in appearance but is not often pigmented. There may be various forms of pruritus, and eczema is frequent.

Edema is not a usual symptom of chronic interstitial nephritis unless it is the result of

cardiac dilatation or unless the interstitial inflammation is complicated by an attack of acute nephritis.

The nervous system shows two groups of symptoms: those due to toxemia which have been described above and those due to hemorrhage. Hemorrhage into the brain is frequent and is one of the most important causes of fatal terminations. It presents all the symptoms of any ordinary apoplexy.

Cramps in the extremities are very frequent and are painful and often result in considerable loss of sleep.

Catarrhal inflammations of all the mucous membranes as chronic gastritis, ileo-colitis, chronic bronchitis, etc., are very common manifestations of nephritis.

The eyes have been described.

Deafness may occur as a transient uremic manifestation or it may be more or less permanent from hemorrhage into the inner or middle ear.

The liver is often enlarged as a result of the passive congestion from cardiac weakness, and this passive congestion plays a very important part in the production of catarrhal inflammations in the gastro-intestinal tract and bronchial tubes.

Terminal infections are frequent, like pneumonia, pleurisy, pericarditis, abscesses, and others. Many so-called pleurisies with effusion, however, in nephritis are only pleural transudates from cardiac weakness.

The ordinary case of chronic interstitial nephritis is not usually difficult to diagnose if sufficient care is used. It is often quite difficult or even impossible to determine whether it was primary or the cardio-vascular condition that accompanies it, but the two conditions are so closely related that an error is not a serious one.

The presence of some of the symptoms and careful study of the urine will usually suffice to make a diagnosis. I shall not discuss in much detail the urinary findings as these will be taken up in another part of the symposium. There is usually a polyuria until the heart fails. These patients frequently get up at night to urinate and usually void from 2000 c.c. to 4000 c.c. or more of urine in 24 hours. The gravity is usually below 1015 and very frequently below 1010. There is almost always present, a trace of albumin if it is looked for with sufficient care. Albumin is not always present, however, and its absence, especially in one or two specimens, does not exclude nephritis. If the specimen is carefully centrifuged there will almost always be found a few or more hyaline or finely granular casts.

I should also like to take this opportunity to mention the importance of a careful examination of the kidney function. This is not only of great importance in determining the prognosis but is also frequently of considerable value in the treatment of the case.

Chronic interstitial nephritis is essentially a progressive disease, often requiring a great many years to run its course. The cases are usually affected with some symptoms, most frequently with those referable to the cardio-vascular system and often with mild forms of toxemia. They are not well. They tire easily. Their mental capacity is not as good as formerly. They do not eat well nor digest their food as well as they did previously, and they often gradually lose in weight and become anemic. The disease gradually progresses and the patients usually sooner or later die quickly or reach a stage of chronic invalidism which may exist for a very variable length of time. Death in most cases is caused by cardiac dilatation, uremia, or a cerebral hemorrhage. Some cases die of a complicating disease, like pneumonia or some other infection, and many gradually die of exhaustion due to a combination of many factors.

CHRONIC INTERSTITIAL NEPHRITIS; WITH ESPECIAL REFERENCE TO CARDIO-VASCULAR CHANGES. MEDICAL MANAGEMENT.*

By J. A. Flexner, Louisville.

I wish to commend the choice of the title assigned me in this symposium. It was intended, I am sure, to distinguish between what is commonly called "treatment" and the more comprehensive term Medical Management of the Cardio-Vascular side of chronic interstitial nephritis. I think I do no more than scant justice to the trend of modern medical practice when I say that the tendency is as far as possible away from the empirical—the effort being to base our practice (using the word in the largest—inclusive sense) on the recognized cause of disease processes and on the natural history of the disease itself. For these reasons medical management is a far more appropriate term than medical treatment.

Approaching our part of this topic from these viewpoints, I believe there will be no disagreement when I say that the origin, the very starting point of the vascular, cardiac, renal changes which mark the earliest stages of this condition lies in some infectious process—either acute or chronic. Thayer pointed out some years ago the coincidence between those who had had typhoid fever in their

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youth and early manifestation of arteriosclerotic processes in the systemic vessels. McCarthy at the Phipps institute in Philadelphia recognized similar renal changes in tuberculosis. Many other observations could be quoted covering this point. When we remember that the kidneys are the great emunctory organs for the chemico-toxic products which result from the bacterial destruction of our tissues as the result of infectious processes, and when we further recall that there is scarcely an infection of any severity which does not have an albuminuria and other evidences of destructive processes in the kidney accompanying it and again when we realize that these toxic substances are carried to these organs by the blood stream, we can understand the damage to the renal vessels and structures by reason of the concentration of the poisons in the kidney.

Therefore, I do not hesitate to state that I fully believe that in our management of these cases we must have first regard to the elimination of infectious processes as the first step in treatment. By this I mean infectious processes active or latent at the time we first assume management of the case and which may be entirely unrelated to the original cause of the trouble.

Meltzer has shown us the enormous factors of safety in human economy. A very fair degree of health is compatible with a very large diminution of our renal tissue. Hence after the diagnosis of the beginning changes in the arteries, kidneys and heart, the management of these cases must be based upon a radical conservation of the work put upon these tissues. This means the total removal of every point of infection that can be found within the body—infected teeth, tonsils, prostates, appendices, etc., as the starting point of management. The importance of being thorough in this part of these cases especially in the early adult life, has been impressed upon me many times. I have seen high blood pressure, albuminuria, casts, etc., disappear after extirpation of abscessed teeth, infected tonsils, and now and then an infected ovary or pus tubes, long the domicile of some happy-go-lucky gonococci. While the importance of safeguarding our cardio-renal system from the prolonged dealing with these bacterial by-products cannot be over-estimated, the thorough handling of the protozoal toxins and those of the spiral organisms is of a greater importance because of their greater affinity for the endothelial lining of the arteries themselves and their greater destructiveness due to the long chronicity of these parasitic diseases and the virulence of many of their toxins. It is right here that the thorough eradication of syphilis and malaria will bring the greatest benefits to mankind.

It will be evident from what has preceded in this symposium that the cardio-renal picture is a varying one and, I take it, it is almost a truism to state that the medical management must take note of the degree of cardio-renal insufficiency which exists as well as the complete history of the patient himself. I think it is particularly important here to know "what kind of a patient the disease has." With frequent necessity of radically altering the entire life of patients in so far as their habits of eating, drinking, smoking, etc., are concerned the physician who can secure the fullest co-operation of his patient in reducing the load the heart, blood vessels and kidneys carry, will do his patient the maximum of good possible.

The incidents of the disease as they present themselves in the course of its evolution are varied, and the manifestations are frequently the results of circumstances well within a patients own control. Thus I have known a single large meal with its concomitant overdrinking to precipitate a uremic attack which under ordinary care might have been long delayed. The cardiac changes which up to a certain point can be regarded only as beneficent are a possible source of the greatest distress. Who that has witnessed death from the acute suffocative pulmonary edema which is often enough a terminal event in this disease will not understand the necessity for applying to his cases the best knowledge he has regarding the means of enforcing as complete a cardiac rest as is obtainable. When these conditions arise, I need not mention that a high grade of renal insufficiency also exists. Whether it be of the type associated with dropsical effusions, salt retention, etc., or the variety without dropsy, where water elimination is good but toxic elimination nil, the indications are to take the burden off the crippled organs and by eliminating through other channels, the skin and the intestinal tract give the over-worked and over-burdened organs a chance to recuperate. It is probably here that Karrel diet with the proper use of digitalis and the alkalies needed renders its greatest service.

The subject of blood pressure in connection with this feature of chronic, diffuse nephritis is a most interesting one, and volumes have been written about it. The work of Dr. Willard Stone of Toledo, is among the most applicable to daily practice, which I now recall. High systolic pressure is almost a necessary part of this disease when once it has gone far enough to encroach upon and reduce the size of the kidney and definite cardiac hypertrophy has taken place, along with arterial

sclerosis. It is a definite compensatory phenomenon and only rarely requires direct treatment itself. Possibly here is one of the symptoms of this disease which has given much popular uneasiness and in an unnecessary way and which is for a time, at all events, amenable to hygienic and dietetic management. Measures which will relieve the blood stream of the excess of toxic organic and inorganic poisons such as greatly reducing the nitrogen and saline intake—venesection, sweating by heat processes, and not with pilocarpine purging, in moderation, all may be considered in their proper places in treating this symptom. But rarely have I had occasion to resort to the daily use of the nitrites as recommended by some authors.

The knowledge of diastolic pressure and hence the pulse pressure and the relation between pulse pressure and diastolic pressure are, in my experience, of far greater importance in the management of these cases than merely a knowledge of the systolic pressure. When one realizes the physiological significance of the diastolic pressure, the importance of keeping a record of the changes in it become manifest. I am sure that by watching this feature in certain nephritics and taking the proper steps to control either a fall or rise of the diastolic pressure beyond the critical point, for the particular case, I have averted or postponed disaster. In this connection I may say that while palpation of the radial artery gives a close enough reading for systolic pressure, the auscultatory method is the only practical one for diastolic reading and fairly constant readings may be had this way by a little trial.

That there are many other incidents or complications as they are frequently but incorrectly called, that arise in the course of evolution of this disease, I need not more than mention. The acidosis and its attendant symptoms, the anemia, the digestive and intestinal disturbances, the ocular and other nerve symptoms even the major accidents, like apoplexy, which so frequently accompany these advancing vascular and cardio-renal changes are too well known and the aid which we can render varies so with the particular symptoms or group which are in evidence that it is impossible within proper limits of this paper to deal with each in particular. The general principles underlying conservative medical practice must be the guide for each case.

To re-state my views on the medical management of the cardio-renal aspects of chronic interstitial nephritis, I would say that the foundation upon which the whole structure rests is to conserve, by all proper means the reserves of function left in these organs, in fact to endeavor by regulating the basal metabolism of these cases on the one hand, the physical and mental output on the other to increase their reserves; to so circumstance and environ these cases that no organ will be put to over-strain, or given a load to carry for which it has been rendered unfit. By living well within their physiological resources long and useful lives may be had for many of these cases.

Dr. L. F. Bishop years ago, in his little volume on Blood Pressure, wrote of the importance of the study of the means of prolonging the lives of the aging and the aged. He dwelt upon the colossal loss, to mankind, of the accumulated knowledge and experience and the ripened judgment of those leaders in society who died in their sixties, or earlier, from one or other of the accidents connected with this form of disease, many of which are avoidable. In many parts of the country organizations of one kind or another, more or less modelled on the life institute of Professor Irving Fisher of Yale, have arisen, and I hold it the duty of the practitioners throughout the country to spread the knowledge of the great good these organizations are capable of doing.

DISCUSSION:

Frank W. Fleischaker, Louisville: I think the association is to be congratulated on the opportunity of having heard such an excellent symposium as we have listened to this afternoon. There is very little that I can add to what has already been said.

This is a very important disease and a very common condition. Any of us here this afternoon could talk possibly an hour or so upon the etiology, symptomatology, prognosis, treatment, and so on, of chronic interstitial nephritis, but that would only be repeating in the main what has already been said.

This symposium was aimed especially at getting the cardio-vascular changes that occur with a chronic interstitial nephritis. Chronic interstitial nephritis is a name that we physicians have clung to; we have called it chronic parenchymatous nephritis and chronic interstitial nephritis. The pathologists say differently. The pathologists say we are dealing with a large white kidney or a secondarily small contracted kidney, or we are dealing with a gouty kidney, or an arteriosclerotic kidney, or a senile kidney, but that makes little difference if we understand what we mean by a chronic, diffuse, non-exudative nephritis, or what we mean by chronic interstitial nephritis in contradistinction to chronic parenchymatous nephritis. This is all that is necessary. We understand the production of it. When we think of chronic interstitial nephritis we, at the same time, think of cardiac changes. We must think of them. It is not of much moment whether the pathology of the heart is primary or the

pathology of the kidney is primary. They seem to go hand in hand, and we physicians speak of them as cardio-renal changes or cardio-renal cases.

The prognosis and treatment do not make much difference whether one was the first or the other originated first. We take the symptoms as they come for the treatment.

The changes in the heart result in hypertrophy. Whether this occurs, as Dr. Clarke stated in his paper, from a mechanical or chemical method we do not exactly know. Whether it occurs out of a defensive action on the part of the heart in compensating, in propelling blood through the contracted capillaries of the kidneys, and in that way producing hypertrophy of the muscle, or whether it is due to something in the blood by chemical means producing high blood pressure and cardiac hypertrophy, the condition is there. We have hypertrophy of the heart and high blood pressure. Those are some of the earliest signs of an interstitial nephritis, cardiac hypertrophy with a high blood pressure.

I wish to call your attention to one thing, and that is in some cases we meet with, where we have a palpable radial artery that is hard and sclerotic, a palpable, tortuous temporal artery, hard and sclerotic, with visible pulsation at times; we examine the urine and find an increased output of the urine; we find slight traces of albumin; we find enlargement of the heart, and when we come to take the blood pressure, we oftentimes find the blood pressure not high; the blood pressure is lower than normal; particularly the systolic blood pressure. What does that signify? It would signify to my mind degeneration of the heart, a weakness of the heart muscle, a lack of tenacity of the heart muscle to hard work. There is compensatory hypertrophy and this condition comes on at a time when it cannot hypertrophy any longer; the heart loses its tonicity, and we have weakness of the heart muscle with myocardial degeneration as a rule. Instead of treating the case actively as we should, we watch for high blood pressure, and we have done this for years and years, and when we get a low blood pressure we think the case is improving, but it is not improving, and we are losing the tonicity of the heart muscle.

C. L. Sherman, Milwood: I would like to ask Dr. Dowden if I understood him correctly in regard to the output of liquids in interstitial nephritis. I understood him to say that we have a diminished output of the liquids, and in closing the discussion I would like him to explain that. Then in regard to the fixed specific gravity, that is something I would like to emphasize. That is a thing we all can watch. Let us suppose we have a patient with a urine whose specific gravity is 1,010; we examine it again and find it 1010 again, and so on for a number of times; then suppose we increase the proteids and decrease the liquids in that patient, and the specific gravity still remains 1010 that kidney is just able to excrete a certain amount of solids, that is what I think he means by a fixed specific gravity. That is one of the most important early symptoms. Also the phenolsulphthalein functional test is another that is easy and sometimes we ought to employ.

John R. Morrison, Louisville: This is a very interesting subject and I have been greatly impressed with the symposium. We are all interested because a large number of men have this disease. It attacks the men who are worth while in a community, and Dr. Flexner in his paper upon the etiology of the disease pointed out the importance of always being on the lookout for infection. The infectious diseases we know have a foundation many times for nephritis. And then we should take into consideration focal infection that comes from the teeth, enlarged and diseased tonsils, infected sinuses, and the prostate. The prostate is often overlooked in connection with this subject. In the first place, the prostate may be a source of infection and may be the cause of backward pressure on the kidney. In cases in which this back pressure has been relieved, the symptoms of chronic interstitial nephritis are often relieved.

As regards the symptomatology, we cannot go into that deeply. It divides itself into two classes: cardio-vascular, those cases where we have hypertrophy, high blood pressure, palpitation, and so on, and then other symptoms relative to the intoxication of the nervous system, the aneurysms, etc. These are all very important and as Dr. Davis said in his paper, they are frequently overlooked for a long time. They may be ordinary in character, gradually accumulate, and lead to the death of a valuable individual who might have been saved had the disease been recognized early and the proper treatment instituted.

I quite agree with what Dr. Dowden and Dr. Flexner said, that one of the best ways of finding out whether a patient has nephritis or not is to determine the relationship of the output and intake with water, with salt and nitrogen, and it is easy to find out about the intake and output of water, although it is such a simple procedure that very few people think about it or have it done. It is most difficult to have this done and correlate the amount of hematuria with the tendency to the fixation of the specific gravity. A low specific gravity means trouble in these individuals.

As regards the phthalein test, it is easy of performance, and it has given us a great deal of valuable information. When we take up the Ambard co-efficient we have to rely on an expert, but for ordinary daily work its relationship to the conservation of the kidney means too much water, maybe too much salt, too much protein, neverthe-

less it is a means for us to follow and many patients can be relieved and their lives prolonged by following a simple procedure like that.

C. W. Dowden, (closing): In answer to Dr. Sherman, he misunderstood what I said; that the question of fluid retention was one of the early signs of nephritis. As a matter of fact, in compensated nephritis the output of fluids is in excess of the intake because, owing to the lack of concentrative power of the kidney, nature calls for a greater output to make up the deficiency. However, in the latter stages of interstitial nephritis, after the burden of the kidney is transferred to the heart and myocardium, we get with our failing heart retention of all nitrogenous products. When we get these it means myocardial failure and fixation of the specific gravity. A low specific gravity means that the kidney is doing its work all right in interstitial nephritis; fixation of high specific gravity means myocardial weakness with retention of nitrogenous products, much as we would have in the acute or subacute nephritides. So in the later stages, the high specific gravity at a fixed point is of doubtful significance.

A REVIEW OF THE DIAGNOSTIC FINDINGS IN GASTRIC AND DUODENAL ULCERS.*

By J. A. Sweeney, Louisville.

An important fact which is not to be overlooked in the consideration of the subject of this paper, is that we rarely meet with an acute ulcer; as it usually gives no symptoms, unless situated on or sufficiently near the cardiac or pyloric sphincters.

Every ulcer, irrespective of its location, begins as an acute ulcer, which undergoes certain changes, that transforms it into a chronic ulcer. The acute ulcers are really erosions, limited to the mucous and sub-mucous coats of the stomach and duodenum and in the great majority of cases, heal spontaneously.

In the last few years there has been many important changes and additions in and to our means of diagnosing chronic peptic ulcer. We still recognize the importance of some of the older methods, as well, as their imperfections and lay great stress on our later ones.

We are now giving attention to the size, shape, depth, and location of these processes, as well, as to the functional derangement, caused thereby; that we select the treatment best suited to the individual case; no longer treating all peptic ulcers by rule or routine but deciding which are surgical and which are to be given the benefit of medical treatment. Such may be determined at the time of diagnosis or after close observation of the case, while under treatment; as we are now able to follow our cases, during treatment and note what changes occur in the ulcer itself, as well as the effect of such changes on the stomach. By such procedure, we can protect the patient from the development of cancer and maybe make an early diagnosis of secondary cancer and, thereby, make it possible to save the life of our patient.

Before making a diagnosis, the following order should be followed and the relative value of each step be shown by its position in the order of its diagnostic consideration, viz.: History, physical examination, laboratory findings, and X-ray examinations.

In no field of medicine does history play so important a part as in diseases of the digestive tract. Too much time can not be taken in listening to the patient's recital of his or her symptoms; both past and present; giving in his or her own way and as free as is possible, from "leading" or prompting.

The most striking symptoms most often given is hyperacidity, "hunger" nausea, and "hunger" pain. These are present in more than seventy-five per cent. of such cases. There is a chronic ulcer in about sixty per cent of those cases, that complain of hyperacidity and a chronic gall bladder or appendix in the balance of such cases. These patients are usually "cibophobiacs" and habitual users of alkalies; most often soda or milk of magnesia or both.

These ulcers appear in both sexes from 16 to 60 years; often a bit earlier in the female than in the male. Their symptoms are, usually, first noted in the spring or autumn and are most often worse at these seasons.

PAIN.

Pain; its character, location, time and length of occurrence; the influence of food-intake on pain; its character and quantity; constipation; loss of weight and character of stools are of great value, as diagnostic signs.

A close consideration of these statements from the patient will give the examiner a proper interpretation of cause and effect.

Pain plays a very important role and it is usually present, since it is rather difficult to conceive of an eroded area of the stomach or duodenum without the presence of pain. That such occurs is shown by the presence of acute ulcers and too, the knowledge, that perforation sometimes occurs without any forecasting symptoms, whatsoever. Pain that can be considered characteristic, does not usually occur, until the ulcer has become chronically thickened to some extent. Except under usual circumstances, do acute ulcers produce

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pain or other symptoms; so, it seems, that one can not discuss the diagnosis of acute ulcers from any other viewpoint, than that of haematemesis and perforation.

Lennander says, that the pain in ulcer is the result of inflammation of the lymphatic vessels and glands, which drain the affected area. The painful cramp is attributed to a strong, spasmodic contraction of a part of the stomach, stressing the parietal serosa, either directly or through the mesenteric connection. Pain, irrespective of the location of the ulcer, rarely occurs sooner than fifteen minutes or more than three hours after the ingestion of food. It is cramp-like or burning in character; persists for one or two hours; and when in the stomach, is not relieved by position nor by the taking of food. It is, however, relieved by vomiting, aspiration or lavage, and very frequently by taking alkalies. The pain, very rarely occurs at night, in contra-distinction to gall gladder affections, where night pains are the rule. Pain occurs in attacks, separated by intervals of complete freedom from distress; varying in length. There is no doubt but that pain is the important subjective symptom and may be the first to attract the attention of the patient to his gastric lesion; therefore, it must be regarded as a cardinal symptom but whenever a patient relates a story of repeated vomiting, particularly of food, eaten the day previous or some several hours previously, with pain in the stomach, we can reasonably suspect the presence of ulcer.

PHYSICAL EXAMINATION.

In making the physical examination, the greatest importance is to be placed on the presence of tenderness: as, when an ulcer has given rise to a local inflammation of the parietal peritoneum, pressure on the inflammed area produces pain; since it has been demonstrated that pressure is an adequate stimulus to the inflammed sub-peritoneal tissue.

As tenderness is due to inflammation, it is largely independent of spontaneous pain; so, in considering the true value of tenderness, we must always investigate the sensory status of the patient, as a hypersensitive patient will always exaggerate the intensity of his pain; while the hypo-sensitive patient might underestimate the pain-intensity; therefore, if only tenderness is elicited in the epigastrium of a hypo-sensitive patient, much value should be placed on such as a diagnostic sign; on the other hand, such a symptom in a hyper-sensitive patient would carry less significance.

When a tender point is present, it must be consistent; for instance, if the examiner's finger be kept on the tender point and the patient's position changed to either side, this tender point, with ulcer, disappears and then re-appears, when the dorsal position is resumed. The persistence of the same epigastric point of tenderness, even on changing the position of the patient, argues against the presence of ulcer. It was formerly thought, that the tender area corresponded to the site of the ulcer; as for example, tenderness over the left lower dorsal region signified an ulcer on the posterior wall of the stomach. This can now be disregarded, as of absolutely no value. Tenderness when present, as described, must always make us suspect some degree of inflammation; but, as the latter re-appears or subsides, so tenderness, in ulcer, may be present or absent.

Consequently, such tenderness is a valuable aid as a diagnostic sign.

LABORATORY FINDINGS.

In the use of the stomach tube, we admit that assistance may be had from the study of the gastric contents, when considered together with history, physical examination and radiography, but laboratory findings in themselves even when properly interpreted, should never lead to a conclusive diagnosis of gastric or duodenal ulcer.

The stomach tube gives us information, as to motility and secretion and must be applied in the fasting stomach or after a test meal. To properly estimate motility, the patient should receive a proper meal, at least, seven hours before the contents are to be aspirated. Normally, the amount of contents in a fasting stomach should be 20 c.c. or less; acid or neutral in reaction and any amount in excess, is regarded as abnormal.

If an ulcer is on or very near the pylorus, the motility will undoubtedly be interfered with, in direct proportion to the degree of stenosis, caused by either the inflammatory or cicatricial tissue present. This would naturally influence the amount of gastric content found in the fasting stomach.

Ulcers around the cardia, lesser and greater curvatures, at a distance from the pylorus, interfere less with the motility and the amount of gastric content, except in a case of hour-glass stomach, where similar phenomena may be observed.

It is now an accepted fact, that the gastric secretion is not always hyper-acid in gastric and duodenal ulcer and, at the same time, there is no doubt, that in the majority of cases, hyper-chlorhydria is the rule; although in a smaller number of cases sub-acidity may be and is present.

In determining the quality of the gastric secretion, an arbitrary test-breakfast, the Ewald-Boas, is employed the world over. This

should be given in a scientific way and not, as is so often the custom, that of telling the patient to take a couple of pieces of toast and a cup of tea and report at the office at such and such a time. Have the patient fast for from seven to twelve hours before giving test meal; at a stated time, order that he or she eat their usual meal; of that, usually eaten at that meal time. Two or three hours after the meal, have them eat a dozen dry raisins or a half dozen stewed prunes, or a saucer of half-cooked rice; then fast until the time for the test meal; at which time you give, or order given, a weighed and measured meal, which is simple in character. Note the time consumed in eating the meal; then, one hour after beginning the meal, plus the time consumed in eating the meal, is the time that the stomach contents should be withdrawn.

Since no two or more individuals titrate and read the colors alike, the personal equation must necessarily be considered since we read terms of percentage-acidity, varying conceptions, regarding end-reactions, would hardly give us any definite knowledge of the content. So, it is important, that such variations be kept in mind and when possible have this part of the analysis done by the same man, whose method and conception of end-reaction-reading is understood.

No conclusion should be drawn from the analysis of the stomach contents from one test meal. This should be repeated two or more times, at short intervals.

About the time that we were enjoying a feeling of security in our laboratory deductions, came Reyfuss and his co-workers with their method of fractional-titration; the results of which are somewhat at variance with the accepted method of acid-determination.

The old masters taught us that the maximum height of acidity was one hour after the test breakfast but Reyfuss says that he has demonstrated the maximum acidity to be several hours after the test meal. It has, also, been demonstrated and proven by gastric lavage that after the aspiration of the contents of the stomach, one hour after the ingestion of a test breakfast, some residue of the test meal can be washed out and it has been further demonstrated, by means of roentgen-ray, that the complete removal of the gastric residuum, with the aid of the stomach tube, is by no means certain.

Reyfuss has, also, demonstrated that the heretofore accepted idea of the residuum of the fasting stomach of 20 ccs. can not be maintained. He found that in 100 normal stomachs, there was an average of 52 ccs. of residuum present in the fasting condition. This throws an entirely new light on the residue-feature in the diagnosis of gastric conditions, particularly of ulcer.

BLOOD.

The presence of blood in the gastric secretion, either macroscopically, microscopically or chemically, i.e., occult blood, is of no diagnostic significance, as the use of the stomach tube, especially, if procedure is accompanied by much retching, may produce it.

Blood in large quantities, when evacuated through a stomach tube or vomited, is of double significance, when accompanied by pain and tenderness.

Occult blood, as found in the stool, after the patient has been on a meat-free diet for several days, with daily evacuation of the bowels and when all reason for its presence can be eliminated, is one of the most valuable aids in diagnosing the presence of ulcer. Blood, as shown by hematemesis, is neither a pathognomonic nor a cardinal symtom, as there are many other conditions that can cause it. It is a well known fact, that a profuse hemorrhage may occur from the mucous membrane of the stomach, apart from ulceration, as for example, in severe anaemias; in the purpuric group of blood diseases; in acute specific fevers; and in diseases of the liver and kidneys.

Gastrostaxis, a condition that is sometimes found in young adult females is an oozing of blood from an intact gastric mucous membrane, in the absence of any other disease, in which bleeding is likely to occur.

A chronic gastritis may give rise to vomiting of blood and it is recognized that epigastric pain with vomiting may be due to chronic disease of the appendix and also, when in this condition hematemesis may occur; then, too, hematemesis in a chronic appendicitis, may due to an acute ulcer of the stomach; in others, to a chronic gastritis, which may be an independent condition. It may occur as a result of the rupture of varicose veins of the oesophagus or stomach; such as exists in hepatic cirrhosis and enlargement of the spleen; also, from the rupture of a dilated artery as is seen in arterio-sclerosis; it may also occur in gastric congestion, inflammatory or mechanical, resulting from venous obstruction.

Boas says that without occult blood finding, we should not diagnose ulcer but this is not an accepted fact; although, one can say, that where occult blood is persistently present, we can conclude, that the ulcer is in an active state. A continuously positive occult blood finding is valuable for a decided ulcer diagnosis; whereas a negative result signifies nothing.

THE ROENTGEN RAY.

The roentgen ray is our new and best addition to the methods of diagnosing ulcer and it sometimes seems, as though it was worth all our other methods put together but, of course, this is not true; for as a matter of fact most of our cases, if carefully studied, will have the diagnosis of chronic ulcer made before the X-ray is employed.

The "ray" is of immense value to us, however, not only in substantiating the previous findings but alas in locating the process and noting the character of same and, at the same time, the size and extent of its erosion; this latter knowledge, being very valuable. It, also, serves us in diagnosing doubtful appendix and gall bladder cases, which simulate ulcer but you are warned not to accept an X-ray diagnosis in any lesion in the gastro-intestinal tract; let it occupy, important as it is, as a diagnostic agent, its place by the side of the older methods, with which, we made fairly positive diagnosis before it came into use and which, now, I am loathe to say, is often the only step taken by the X-ray enthusiast in diagnosing these lesions and its verdict is much too often accepted, to the undoing of the patient and to the chagrin of the physician.

The roentgenologist too often makes daring diagnoses, gleaned from his flouroscopic survey and reading of the X-ray plates, having no knowledge of the patient, further than that gotten from casual observation, which, in my experience, has proven to be false, about as often as true, and the physician, who allows himself to be influenced, to the extent of accepting an X-ray diagnosis in these obscure cases, when not confirmed by careful study of the case and the employment of other means to elucidate the case will find, much to his sorrow, that his diagnosis is all wrong and the delay and improper treatment, incident to the error in diagnosis, has served to undo and weaken his patient; maybe, to the extent of fatal termination.

Now, it is not my intent to speak disparagingly of the "ray" for its value, as a diagnostic agent, is immense and the aid, derived therefrom, in following up your treatment, by watching through the flouroscope and on the plates, the progress which you make, is invaluable. What we want from the roentgenologist is X-ray evidence and not X-ray diagnosis and in appreciation of its value, it shall occupy a prominent place in our armamentarium. The profession is not yet educated to recognize the difference in roentgen evidence and we must remember, at the same time, that the radiologist, like every other consultant, often faces a disagreeable dilemma. He naturally wishes to make his diagnosis as definite as possible and does so without the knowledge of facts that are as important as these, that his instrument reveals. The tendency is to base a diagnosis on finding a defect in the wall of the stomach or duodenum or both, quite forgetting the indirect signs, such as hypermotility, spasm, peristaltic unrest, and the result of some of these, i.e., six hours residue. These signs serve to warn us that there is something wrong with the stomach or the duodenum; that they appear in ulcer we know, but do not we get such signs, as a reflex, from diseased appendix and gall bladder; also, do not such show very often in irritable and highly organized nervous individuals?

There is likely no part of the digestive tract, where the roentgen signs are so definite, as in the duodenum; here the lesions are usually located within the first inch or inch and a half of the gut, in a small area, on which, we can concentrate our attention and where definite evidence of ulcer is demonstrated by X-ray, in all but a very small per cent. of cases and in these small number of cases adhesions are the differentiation.

It is the large, indurated, chronic ulcer, from the edge of which cancer more often develops and it is these ulcers, located usually, on the lesser curvature and near the pylorus, that are more easily demonstrated by the X-ray and the importance of an early diagnosis of the presence of such is quite apparent. We very rarely discover an early primary cancer but we can find these large, indurated, chronic gastric ulcers and offer them for surgery, in time to prevent the dissemination of hopeless cancer and it is safe to say that a large percentage of cancers develop from old ulcers, that, had they been closely observed and studied over the period of medical treatment could have been saved by early surgery.

Now the points, which I wish to emphasize in this paper, is that the other and older methods must not be discarded just because we have access to the X-ray; we must use all the methods that have served us so faithfully, before we ever heard of the X-ray.

Also to discourage the tendency of accepting X-ray diagnosis.

To emphasize the great value of the X-ray in demonstrating the size, location, and character of the ulcerations.

Differentiating, when possible, functional and organic pyloric stenoses.

In conclusion, I wish to make a plea for fair treatment, at all times, on the part of the surgeon toward the internist, in regard to diagnosis; that is, when the internist has diligently studied his case. It has been my lot

to have the surgeon announce, after making a section and examining the stomach, extragastrically, that no ulcer exists—the surgeon coming to his conclusions by inspection of the stomach and palpating same, noting the absence of infiltration, crater-like areas and scars. Here, again, the personal equation enters into consideration; for, what might be considered infiltration, etc., by one surgeon, might be dismissed or passed entirely by another, as of no consequence.

So it simmers down to the fact, that the operator with the greatest experience in stomach surgery and surgical pathology, is more likely to interpret correctly that which he encounters in the gastric area, than one who has had less experience which, no doubt, accounts for the very large number of ulcers diagnoses by some surgeons, as compared to others and the varying statistics, as to the frequency of the ulcer.

DISCUSSION:

C. W. Dowden, Louisville: I think we can all agree with everything Dr. Sweeney has said. There is only one thing in which I would differ with him, and that is, in my opinion there is only one method by which gastric or duodenal ulcer can be positively diagnosed, and that is by the X-ray plate. There is absolutely no symptom that might be referred to a gastric or duodenal ulcer that cannot or will not come from disease of the pancreas, the gall-bladder, or even the appendix. I rarely make a diagnosis positively of ulcer of the stomach or duodenum. While I may make a diagnosis of pyloric obstruction, I always reserve the right to say that it may be an ulcer of the duodenum, or it is the gall-bladder, or it may be the appendix. Just to illustrate: In the last two years I have seen five cases; two occurring in the same family, brother and sister, and occurring at the same time, characterized by sharp abdominal pains, followed by intense jaundice; several such attacks of this kind had occurred in the past, with intervals of complete relief between attacks. The X-ray showed distinct shadows in the gall-bladder region. Both patients were operated on, and both were found to have duodenal ulcer. Any number of times we get pyloric obstruction with little defects of the pylorus or duodenum, and operations show no ulcer. It shows the gall-bladder diseased with or without stones, possibly dense adhesions which disturb the normal contour of the duodenum. I have seen three cases in which there was hyperacidity. There was pain two hours after eating; there was food relief; there was alkaline relief, and there were hemorrhages. In one instance there were hemorrhages dating back over eight years. In each case there was bleeding almost to exsanguination. Operation was done, and no ulcer was found.

If I had to dispense with all tests, laboratory (X-ray the one exception), history and physical examination, all but one, I would undoubtedly retain a good history as the best means of diagnosing ulcer of the stomach or intestine. The test meal is not of much value. Hyperacidity we will find in seventy per cent. of the cases in all diseases of the abdomen. In the series of five hundred such cases I reported four years ago, in seven per cent. there was a total absence of acid, and there were forty per cent. in which the acid condition was normal.

Dr. Sweeney did not refer to blood Examinations. I see in the audience a doctor for whom I recently examined a patient, and in the last year he gave a complete report of this same case before one of the local medical societies, and the only thing for which the diagnosis of ulcer was questioned was the fact that the man had polycythemia, (too many red cells), and a high hemoglobin content. I want to say that this is the very one thing in the blood that does distinguish duodenal ulcer from gastric ulcer. When you get symptoms you think are indicative of ulcer, if the count is five million and a half and six million red cells, and the hemoglobin content is good, it is evidence of the existence of duodenal ulcer if taken in connection with the history and gastric findings. That evidence is as good and conclusive as any single laboratory test can be. At the time he was criticised it was stated that it was impossible to have a duodenal ulcer with such a blood count. His critic was evidently inexperienced in blood examination of ulcer. The feces, which Dr. Sweeney has covered, are not of great significance, and the X-ray, as I have said, is absolutely essential to us as a diagnostic aid. Obstruction does not mean ulcer, and so far as I know, there is only one positive evidence of ulcer from the X-ray findings, and that is a little crater or punched out defect which we know is not due to adhesions.

In my experience, ulcer of the stomach or duodenum is one of the most difficult of all diagnoses to make. Fortunately, however, when the evidence is strong enough to make a diagnosis of ulcer and an operation is advised and accepted, we usually find a condition that is surgical, and when it is relieved the patient is benefitted.

J. A. Sweeney, (closing): I wish to thank Dr. Dowden for his liberal discussion. I was not able to finish reading my paper; if I had, I would have emphasized some of the points that have been brought out in the discussion. Not infrequently, the internist is sent patients with instructions from their doctor, to have these patients X-rayed and their cases diagnosed, thereby, and sent back properly advised as to treatment, etc. The criticism, that I would make in such cases, is, that the patient is impressed with the fact that, the only step, necessary to a diagnosis of their case, is the application of the X-ray, which will

give all the information and that this can be gotten between trains. Now, all one can do in such cases, is to send the X-ray report to the physician and remind him that but one step has been taken in the examination of the case, from which he can gain as much information as can you and you cannot give further advice, until the various tests are made, of which the X-ray is but one. I agree with Dr. Dowden, that the consensus of opinion amongst those doing digestive work, that there are no lesions in the digestive tract that require such close study and the help, that all tests that are available, can give, as gastric ulcers.

TRAUMATIC INJURIES OF CHEST.*

By W. L. Gambill, Jenkins.

The anatomic make-up of the chest wall, combining strength with elasticity, the protection of its vessels, the further protection afforded by its ligaments and muscles, as well as the structure and location of the intrathoracic viscera is but one of the striking evidences of nature's wisdom. Surgery of the chest to-day in my opinion, offers the greatest field for advancement. When called upon to treat an injury of the chest, the question, paramount in the mind of the surgeon is, "Is the wound confined to the chest wall, or is there visceral injury?" We shall, therefore, follow the established custom of dividing injuries of the chest into, 1, extra-thoracic; 2, intrathoracic.

We shall first consider contusions of the thorax, which may occur under a great variety of conditions, such as blows, falls, crushing injuries, the passage of the wheels of a vehicle, kicks of horses, railway accidents, and falling coal or slate. In the less important forms the symptoms are merely those of a contusion in other parts. There are localized pain and soreness, especially marked during movements of the underlying muscles. The skin may be bruised or abrased and hematomata may occur in the subcutaneous tissue or in the muscles. Fractures of the ribs or more rarely the sternum, are the most serious lesions.

The treatment of these conditions is mainly the enforcement of rest, with such compression of the chest wall as will limit its motion, adhesive plaster strapping with application of heat or cold usually suffice.

Contusions involving the thoracic viscera may be of the most complicated character. The amount of damage done within the thorax without visible external evidence in certain cases is astonishing. This includes rupture of the lung, rupture of the heart or pericardium, or such minor lacerations as lead to hemorrhagic or inflamatory results. As the thoracic wall is markedly elastic, a severe blow or sudden compression may greatly diminish the intra-thoracic space, if at the same time the glottis is spasmodically closed and air can not escape, rupture of the lung will take place with or without injury to the pleura. When the parietal pleura is intact a moderate rupture of the lung may give rise only to pneumothorax. If the rupture is more extensive and if one of the larger vessels is wounded in addition to the pneumothorax, hemothorax may develop. When associated with fracture of a rib and injury to the pleura subcutanous empysema may occur and in severe cases spread over a large portion of the body.

Subpleural empysema may be present in injury to the lung without pleural rupture; this may extend to the root of the lung, and later appear at the root of the neck. As a secondary result of the injury to the pleura, a serous exudate may develop hydrothorax, and if infection be added, an empyema or pyothorax. When the lung is involved traumatic pneumonia is a frequent complication and is always lobar in type.

The symptoms develop rapidly, usually within the first day, and very rarely after the third day. With pneumonia and laceration there will be the combined evidence of hemopneumothorax. Bloody sputum is always an indication of pneumonia or laceration, or both. Rarely following a severe contusion of the thorax, a condition known as traumatic asphyxia occurs. There is present a bluish discoloration of face and neck associated with subconjunctival hemorrhage. Discoloration fades under pressure but does not entirely disappear. The condition is supposed to be due to a dilatation of capillaries, with stasis of deoxygenated blood without extravasation except under the conjunctiva. Perthes concludes that the limitations of the discoloration to the face, neck and upper chest is due to the lack of competent valves in the veins of these regions. As a result of severe contusions of the chest, rupture of the diaphragm may occur with hernia of some of the abdominal contents into the pleural cavity. Stranglation may occur with the usual symptoms of obstruction.

Cardiac damage from contusions of the chest, except in crushing injuries that are fatal, is very rare, although blows directly over the precordial area may induce symptoms of cardio-respiratory collapse, the prognosis and treatment of which is that of shock.

The prognosis in chest contusions depends upon the character of the injury. In every case a careful history should be obtained, not only of the nature and degree of the vulner-

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ating force, but the condition and symptoms of the patient from the time of injury until he is first seen by the surgeon. The prognosis in histories of severe contusions should always be guarded, for even where the initial symptoms are mild, the possibility of severe visceral injury should always be remembered. In the cases associated with marked shock—concussion of the chest, the outlook is always grave.

The treatment is expectant unless infection, hemorrhage or respiratory embarrassment threaten life. The patient should be placed in a position of greatest comfort and ease of respiration. Shock should be treated by heat, stimulants, pituitrin, adrenalin and if severe by intra-venous saline or hypodermoclysis. In case of injury to the pleura or lung, adhesive plaster strapping affords marked relief. Aspiration may be necessary in pneumo or hemothorax if respiration is seriously embarassed. Should empyema develop, thoracotomy and drainage must be instituted.

Aside from contusions wounds of the chest may be all types, and are inflicted by blunt objects, machinery accidents, explosions, knives, bullets, glass, spikes, nails, sword-like pieces of timber in saw mill accidents, and the bits of mine machines. Non-penetrating wounds are not particularly grave. Hemorrhage is generally slight unless an intercostal, internal mammary or branch from axilla is served. Of course, they, as other wounds of the body, are subject to the dangers of infection. Muscles may be severed and nerves, especially the anterior and posterior thoracic, causing a paralysis of serratus and pectoral muscles. These should be immediately sutured.

The treatment is the same as in wounds of the other parts of the body, control of hemorrhage, disinfection by iodine, removal of foreign bodies, as metal fragments and pieces of clothing, sutures if necessary and drainage.

Penetrating wounds of the chest may be of the most varying character, from the slightest perforation with a minute instrument up to the frightful lacerations by machinery. Their gravity depends upon, first the amount of hemorrhage, and secondly upon the amount of air and especially of any foreign or septic material introduced.

The first mentioned is the most immediate danger and its relative extent is to be judged of at the time by the nature and direction of the penetrating substance and by the general condition of the patient. If the patient expectorates blood, the existence of wound of the lung may be recognized. If air can be heard entering the chest or if the lung upon one side is evidently collapsed, it is a sign at least of pleural perforation. If a large vessel has been injured death ensues rapidly. If the diaphragm is paralyzed, it implies injury of the phrenic nerve; if the heart is tumultous in its action, there has been injury either to it or to the pericardium, or else to its nerve supply, if the wound bleeds freely, the blood comes most probably from an intercostal or internal mammary artery, although there may be an alarming or perhaps fatal concealed hemorrhage from these vessels. Another evidence of perforation of at least the costal pleura, is emphysema, which increases with time and may not be present immediately after receipt of the injury.

Penetrating injury of the heart demanding surgical treatment is most often the result of stab wounds.

The symptoms depend upon the nature and site of the penetration. The evident cases show symptoms of shock and maybe unconsciousness. External bleeding slight unless the wound is in direct line with that in the heart, and then projectile systolic bleeding is evident. There may be dyspnoea and cyanosis; the pulse lacks volume, is rapid, feeble, and irregular; the left radial pulse may be lacking or more feeble than the right. Auscultation shows muffled, unusual or distinct heart sounds, percussion gives evidence of hemopericardium. Exploration in suitable cases with suture of the rent is advisable. There are many cases of recovery following heart suture. My personal experience has been limited to one case with 100 per cent. mortality.

The treatment of penetrating wounds of the chest should be directed toward the relief of shock, arrest of hemorrhage, and the prevention or control of infection. In the absence of the symptoms of grave shock or of hemorrhage, careful disinfection of the wound by iodine, drainage in some cases, and application of an aseptic dressing is all that is required.

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Relapsing fever in Venezuela.—Bella gives the details of six cases of autochthonous relapsing fever at San Cristobal. The spirochete was cultivated from the blood of all, including one boy of 5 who had four paroxysms of fever. Treatment was merely symptomatic in this and some of the other cases, but two adult patients were given 0.3 or 0.45 gm. of neo-arsphenamin by the vein. Bugs of the cimex and the flea families or ticks were found in the patients' homes, but the evidence seems to incriminate more the ticks in the transmission of the disease.

INTRA SPINOUS TREATMENT OF CEREBRO SPINAL LUES.*

By Leon K. Baldauf, Louisville.

General condemnation of the intraspinous treatment of cerebro-spinal syphilis has been resorted to by many. Reasons for this may be found in ignorance in type of cases which will yield results and in character of technique of the operator. Other reasons need not be enumerated here. General condemnation, however should not be tolerated by those who have carefully studied the treatment, who have thoroughly watched their cases, and have been using a technique which is beyond criticism. Where failures have resulted, the causes of the failure should be analyzed and it should be definitely determined whether the type of case, the method of treatment or error in technique were responsible. We have almost reached the point where after careful examination fairly accurate prognosis can be given. With our technique far from satisfactory certain predictions can be made in regard to pain, paralysis and gait. Naturally we should be conservative in making our predictions. We are dealing with a progressive lesion where the vascular system is involved and where sudden changes may develop.

In considering the treatment of a disease like tabes or other forms of cerebro-spinal lues, we must remember that we have our present conception of these diseases only a few years and that many of the types of cerebro-spinal lues have been considered heretofore practically untreatable. In view of these facts, any treatment which will yield any results whatsoever should be considered and naturally better results ought to be expected as experience accumulates. The intravenous and intraspinous treatment has yielded results superior to any which has preceded it and while there have been failures in a large percentage of cases much good has resulted. Clinically all observers agree that the best results have been obtained in the early stages of the disease, before pronounced degenerations have occurred.

Draper (*Jour. Amer. Med. Assn.*, 1916, lxvi 400) has made observations on 38 cases, watched over period of from three months to three years. These 38 patients were given 1126 intra-venous injections and 355 intraspinal injections of medicated serum. The technique of administration was the usual one. Twenty-six patients out of a total of 38 were economically useless before treatment. After treatment 22 were back on full time work. The rapidity and degree of improvement depended on the intensity of the treatment. Draper emphasizes the importance of keeping the patients at work on part time at least during the months of treatment in order that their period of disability may be shortened.

Cotton (*American Journal Insanity*, 1915 and 1916, lxxii, 125, 355, 485) in this article which is continued through three numbers of the above journal discusses the various methods that have been advocated for the treatment of tabes and paresis. With regard to the various methods of treatment Cotton considers from experience that the Swift-Ellis method is as efficacious as any. The total number of cases of paresis reported by Cotton was 66 and in all 600 treatments were given. From this number the author selected 31 cases for detailed study who were treated for at least six months, but in all but a very few cases the treatment extended for over two years or the patients have been observed for that length of time. Of this group of 31 patients, eleven, or 35.5 per cent. are classified as arrested; 7, or 22.5 per cent were improved; 7, or 22.5 per cent were not improved and 6, or 19.5 per cent. died. Only four cases of tabes are reported occurring in patients from 48 to 70 years of age and no especial conclusions can be drawn from these patients. From his conclusions Cotton emphasizes the fact that in the use of salvarsanized serum we have an agent which does cause definite arrest in paresis, which arrest includes improvement in the clinical symptoms, physical signs and a corresponding change in the biological reactions from positive to negative. To be effective the case must be treated in the early stages as advanced stages show no favorable reaction to the treatment. Treatment must be persistent and interrupted grading the amount of dose and frequency of treatment to the condition of the patient. The remissions caused by the treatment cannot be compared to spontaneous remission, for the percentage in the former is 35.5 per cent and in the latter case only 4 per cent. The change in the cell count, globulin content, blood and spinal fluid Wassermann reactions are the direct result of the treatment and not to be compared with the variations found in untreated cases of paresis. The efficacy of the treatment depends not on the method used but on the stage of the disease; hence the necessity for early diagnosis in paresis and prompt treatment as soon as possible.

The treatment of the Central nervous system syphilis: Walker (*Boston Medical and Surgical Journal*, 1916, clxxiv, 195) summarizes the treatment and results in the first 40 cases of central nervous system syphilis at the Peter Bent Brigham Hospital. This group includes cases of Tabes, general paresis, cerebro-

*Read before the Jefferson County Medical Society.

spinal and syphilitic meningitis; cases of purely cerebral syphilis are excluded. In the treatment of parasyphilis three methods were employed; one, salvarsan, intravenously alone, another, the Swift-Ellis method; and a third, salvarsanized serum alone intraspinally. Walker used large doses of salvarsan intravenously for those cases treated with salvarsan alone, in those treated with serum intraspinally 20 to 25 c.c. of undiluted serum were used. It was found that cases of syphilis of the central nervous system with only a positive blood react well to salvarsan alone; but they do much better when intraspinal serum is used in conjunction with salvarsan, and some who do not react to salvarsan alone do react well to the combined method. One may obtain improvement in general paresis with the combined treatment. Cases of syphilitic meningitis may clear up with salvarsan alone but the combined treatment is the quickest. Cases of central nervous system syphilis with a negative blood and positive spinal fluid findings react readily to salvarsanized serum intraspinally alone, even when salvarsan intravenously has failed. The spinal fluid of the cases treated with salvarsan has become negative in two cases, whereas the spinal fluid of seven cases treated with serum alone has become negative. Walker feels that salvarsanized serum is a great asset in the treatment of syphilis of the central nervous system, and in the general run of cases he thinks the Swift-Ellis method is of great value and that this method in conjunction with mercury given intramuscularly is the best treatment of syphilis of the central nervous system at the present time. Marked improvement always follows such treament.

Many authors have recommended injections into lateral ventricles and intradural injections. The treatment of paresis by injections of neo-salvarsan into the laterial ventricle, Hammond and Sharpe (*Journal American Medical Association,* 1915, lxv, p. 2147) present a preliminary report dealing with the injection of neo-salvarsan directly into the lateral ventricle for the treatment of general paresis. "In comparison with the deadly nature of paresis, the hazard of intradural treatment, by whatever method is of little moment. On experimental and clinical grounds, both the subdural and intraventricular methods are superior to the intraspinal route, in the treatment of paresis. From a theoretical standpoint, the intraventricular method is superior to the subdural route, and we believe it to be safer. The intraventricular method, with careful technic, and a due regard for anatomy of the brain and the delicate nature of the tissues one is invading, is, we believe, practically free from danger. If the freedom from unfavorable symptoms so far achieved in intraventricular injection can be maintained, it will be imperative to so treat paresis in its earliest stages, with greater chance of marked improvement and perhaps permanent arrest of symptoms."

THE TREATMENT OF SYPHILIS OF THE NERVOUS SYSTEM BY INTRADURAL INJECTIONS OF SALVARSAN.

The Treatment of Syhilis of the Nervous System by Intradural Injections of Salvarsan. Wile (*Journal Lab. and Clin. Med.,* 1915, 1,-119) reports fifteen cases of various forms of syphilitic disease of the central nervous system treated by intradural injections of old salvarsan. None have suffered any ill consequences. In all but two patients definite objective improvement could be noted in the spinal fluid. With full allowance for the possible suggestive element, there was, nevertheless, a marked subjective improvement in the majority of cases. Such improvement was not seen to be transitory, but appears to be permanent. Three patients have disappeared from observation, but none of the remaining twelve have relapsed with regard to symptoms. Four patients have been restored to usefulness and are making a livelihood, which before their treatment they were unable to do. The patients showing the most marked improvement were those suffering from early brain or cord syphilis, but encouraging results were also noted in cases of tabes dorsalis. No patient received over three injections.

Following the introduction of intraspinal injection of serum in the treatment of patients with syphilis of the central nervous system, numerous workers have attempted to inject intraspinally salvarsan or neosalvarsan in weak solution. When more than 1 mg. has been repeatedly injected, several observers have noted symptoms of myelitis in the lower segment of the cord. Marinesco and Minea have observed that neosalvarsan diluted with serum is less irritating than when diluted with normal sodium chloride solution. Fordyce and Ogilvie advise that only a fraction of a milligram of salvarsan be mixed with the serum for intraspinal injection. Clinical evidence seems, therefore, to indicate that only small amounts of salvarsan or neosalvarsan can be safely injected into the subdural spaces. According to Swift the main objection to subdural therapy of cerebrospinal syphilis has been that the serum injected contained such small amounts of salvarsan. Obviously it is necessary to keep the amount of any therapeutic agent below the injurious dose. Therefore, with the evidence at hand only small amounts of drugs at our disposal can be used. The object then must be

to use them in the least injurious and most potent form. From the evidence brought forward by Swift this would be the addition of small amounts of salvarsan or neosalvarsan to the serum of salvarsan treated patients. This serum should be allowed, preferably, to remain in contact with the clot overnight, and should be heated after the addition of the salvarsan. Although this technique is complicated it could be easily carried out in clinics where large numbers of patients are treated, or if the salvarsan is procurable in ampules containing small amounts so that dilutions for addition of the drug to the serum might be economically prepared. Swift summarizes his study as follows; addition of salvarsan to serum in vitro produces a spirocheticidal mixture which is increased in potency by heating. The heated serum of salvarsan treated patients is more spirocheticidal if it has been in contact with the clot overnight, than if it has been separated immediately after coagulation. This is not true with the serum from blood which has been salvarsanized in vitro. The increase in activity of salvarsanized serum produced by heating to 56 C. is due in part to a direct increase in spirocheticidal power in the heated salvarsanized serum and in part to the removal of inhibitory substances in the serum. Both salvarsanized and neosalvarsanized serum are rendered more spirocheticidal by heating. A more active spirocheticidal mixture is produced by mixing small amounts of salvarsan with the serum of a salvarsan treated patient than with normal serum.

Syphilis of the Nervous System—Fordyce *Med. Rec.*, 1916, p 575. Ogilvie modification of salvarsanized serum is now used by Fordyce, in which method salvarsan is added directly to the blood serum. Blood serum removed indifferently from patients acts as well as autogenous serum, and most important step in the technique, next to absolute asepsis, is the use of a nearly neutral salvarsan solution. The blood is removed from an arm vein and centrifugalized to secure complete removal of red cells. To 8 or 10 c.c. of this serum 0.05 to 0.5 gm. of salvarsan is added and the mixture is incubated at 37 C. for thirty minutes. General paresis patients tolerate larger doses than those with tabes or other forms of cerebrospinal syphilis. The initial dose for tabetics should be 0.05 to 0.1 mgm., depending on the bladder involvement and the amount of pain present, and the quantity is gradually increased up to 0.2 to 0.3 mgm., if the patient will tolerate it. Activation of the lesions after the first injection is not a contra-indication, but calls for care. There seems to be no limit to the number of injections that can be given. Cure, amelioration or failure is dependent upon the extent and type of the morbid process. The chief criticism of the intraspinous treatment as I see it is that many cases of cerebrospinal lues, for instance tabes, do as well after intravenous as after intraspinous treatment. This may be granted but in doing so I must offer an explanation. Let me review briefly the pathology of tabes. We have a lesion of the sensory neurone system and we may classify the lesions according as the involvement is:

1. Peripheral processes which include.
(a) Sensory nerve endings.
(b) Peripheral nerves.
2. Cell bodies, spinal and analagous cranial ganglia.
3. Central processes, sensory nerve roots.
(b) Spinal cord. In other words, given a case of tabes with general involvement of the sensory neurone, the peripheral processes may be most markedly involved. Naturally there should be marked improvement after intravenous treatment. Again during life many times it is very difficult to define our exact pathology. As Spiller in his discussion has said: "Oppenheim has shown that there may be focal forms of multiple sclerosis, a disease usually with diffuse lesions. I should like to make the same distinctions for syphilis. Implicating the nervous system, it usually is diffuse in brain and spinal cord, but there may be focal forms of nervous syphilis and the lesion, meningo-myelitis, or meningo-encephalitis may be almost confined to limited regions, as the lumbro-sacral or the thoracic or the cervical or the medulla oblongata or limited portions of the brain. There is thus a focal form of syphilis of the central nervous system independent of vascular focal lesions. There may also be occlusion of a definite artery from syphilis with a definite system complex and I have described several system complexes of this kind such as occlusion of the vascular supply or the oculomotor nuclei with apoplectiform attacks and partial or complete occlusion of the anterior spinal and adjoining vertebral arteries with loss of function in the median portion of the medulla oblongata, and showing clinically as paralysis of all four limbs and sometimes with partial recovery especially in the lower limbs.

Head probably has explained his clinical findings most successfully. From a long series of cases, he differentiates between two main types; a meningo-vascular and another which he considers under the heading of syphilis centralis (term preferred by him to parenchymatous because in the syphilis centralis type both the nerve cell and the neuroglia are involved.) He concludes that under treatment with salvarsan or neosalvarsan the Wassermann reaction in cases of meningo-

vascular syphilis if at first positive will usually become negative with the spinal fluid within six months. On the other hand the more the clinical point to syphilis centralis the less will they yield to any of the present forms of anti-syphilitic treatment. Thus no complete diagnosis can be made or prognosis be given until the patient has been under observation and treatment for at least six months and the spinal fluid has been examined systematically from time to time.

At the present time when cases with suspicious and nervous symptoms present themselves a Wassermann on the blood is positive several intravenous injections of salvarsan are given. These cases ordinarily improve after intravenous treatment but in most instances the result is still more satisfactory following the intraspinous method. It has been our experience that those cases with a positive blood and spinal fluid react much better to treatment than those where the spinal fluid alone is positive.

Improvement in eye symptoms is dependent on the one hand on the time which has elapsed since the appearance of first symptoms and secondly on the extent of involvement of cranial nerves in the basic syphilitic meningitis. Syphilis as we know in many cases gives rise to a severe basic meningitis. Our experience with the Wassermann following the intravenous injection of salvarsan has not not been similar to that of Head. This may be due to the fact that we believe larger amounts of spinal fluid must be negative before a case should be dismissed.

Swift recommends now more than we have been using to 2.0 c.c. fluid. It has been our custom to use different amounts of fluid ranging from 0.2 c.c. to 1 c.c In many cases as little as 2 c.c. will be 100 per cent positive; in other cases 0.6 c.c. will be necessary before a positive reaction is registered. Where a small amount of fluid is used in a routine way many cases as far as the Wassermann is concerned would be overlooked. Many cases like the following are interesting, to start with a spinal fluid where 0.2 c.c. is 4 plus. After treatment 0.2 c.c. is negative, 0.4 c.c. is negative but 0.6 c.c. is positive. If after treatment only the smaller amount of fluid had been tested, the patient would have been dismissed with a negative when really the Wassermann was decidedly positive. The use of different amounts of fluid is of importance also for the reason there. Here we have a means of gauging the improvement in our patient serologically. In his experience Swift believes there were initial 0.4 c.c to 0.6 c.c. of fluid required before a positive is reached that the prognosis is better and that three months treatment intervals of two weeks will suffice to make the required amount of spinal fluid negative. It has been our experience that the use of mercurialized serum gave us quicker and better results as far as the spinal fluid previously positive at .2 c.c. almost negative when 1 c.c. of fluid was used and in that case we used mercuralized serum. Our experience with this treatment in many cases, while in some not very satisfactory, forces us to the opinion that a distinct advance has been made. The future treatment may be, we realize now that these diseases previously considered untreatable are capable of being relieved and that the amount of relief will depend on the progress that we will make. Clinically the remarkable improvement in the gait, eye symptoms and general condition convinces any who have had any practical experience with this treatment of its efficiency. Theoretically a study of the Wassermann reaction can not help but appeal. Given a case with a typical history; treatment given religiously and taken for at least three years. After ten or fifteen years, nervous symptoms appear typical of one of the cerebro-spinal types. Wassermann on blood is negative while Wassermann on 0.2., spinal fluid is 4 plus. Does it not seem rational to suppose that there is something that prevents the interchange of substances between the blood system and the cerebro-spinal system and does it not appeal to you that in such cases that the cerebro-spinal tissues be directly attacked by intraspinous medication? As to the prophylactic treatment of cerebro-spinal lesions. Frequent examinations have now been made of spinal fluids a few weeks and months after infections and in a certain percentage of cases the spinal fluid has shown up positive. Of course, owing to the small amount of work which has been done, it is impossible to determine how many fluids will became positive subsequently. Still in view of our present knowledge, treatment in these cases should be given until the spinal fluid becomes negative and every year for a number of years that spinal fluid should be examined. In that way by rendering a spinal fluid negative and continuing to keep it negative many of the cerebro-spinal lesions may be prevented.

Fordyce states that all patients at the end of the first year of their infections should have a spinal puncture, whether or not they have signs of the disease. If the fluid is negative to tests, they may be assured that there is little danger of later development, whereas a positive colloidal gold test with persistent Wassermann in high dilutions points to an impending paresis. As Swift has said the best

treatment of brain gummata, tabes and paresis will always be their preventative.

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CHOREA; DISCUSSION WITH PARTICULAR REFERENCE TO ETIOLOGY; REPORT OF POST-MORTEM FINDINGS IN AN ACUTE CASE.*

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Chorea takes its name from a Greek word, Xopeia, meaning "dance," which describes the most striking symptoms of the disease.

Under this name, chorea, are grouped several clinical conditions which differ considerably from each other. The common name, St. Vitus's dance, applied to chorea, has come to us from the middle ages, when, under the influence of religious fervor, there were epidemics characterized by great excitement, gesticulations and dancing. For the relief of these symptoms, when excessive, pilgrimages were made to the chapel of St. Vitus in Zabern. Epidemics of this sort occurred during the nineteenth century and descriptions of them among the early settlers of Kentucky have been given by Robertson and Yandell. It was unfortunate, Osler[7] asserts, that Sydenham applied the term, chorea, to an affection in children, totally distinct from this chorea major which is in reality an hysterical manifestation under the influence of religious excitement. Chorea major is pandemic and was the original "St. Vitus's dance".

Before discussing chorea minor, otherwise called acute or Sydenham's chorea, it will be well to dispose of chronic hereditary chorea, otherwise called Huntington's chorea, an affection characterized by irregular movements, disturbances of speech and gradual dementia. Huntington considered its salient points to be its hereditary nature, its association with psychical troubles and its late onset—between the thirtieth and fortieth years. Lyon traced this disease through five generations. The symptoms are sharply differentiated by Osler from those of acute (Sydenham's) chorea. Very few autopsies have been made in this form and these have shown chronic meningoencephalitis with atrophy of the convolutions.

Besides the three chief forms of chorea, namely major or pandemic, chronic or Huntington's and acute or Sydenham's, Osler[1] classifies in this group habit spasm of childhood and saltatory or jumping spasm, depicted most strikingly in the "jumping men" of Maine and Canada who are liable on any sudden emotion to jump violently and utter a loud cry or sound and will obey any command or imitate any action without regard to its nature.

The form of chorea upon which the case to be reported may throw some light is what Osler terms acute or Sydenham's chorea. This effects children chiefly and is characterized by irregular, involuntary contractions of the muscles, a variable amount of psychical disturbance and a remarkable liability to acute endocarditis. The etiology of this form is its point of greatest interest at present and has been the subject of considerable investigation, inquiry having been directed particularly along the lines of heredity, syphilis and infection.

That a tendency to the disease runs in some families is not to be disputed, but it is probable that this tendency is due to susceptibility inherited in connection with nervous and constitutional weakness rather than to inherited susceptibility of any specific tissue cells or to any inherited specific casual agent, as in the case of inherited syphilis. Burr[2] concluded, after years of experience in the University of Pennsylvania, that direct heredity played practically no part and indirect heredity only a small part. The psychic factor was remarkably shown in Starr's[3] clinic in New York. A patient had chorea so apparently typical that Dr. Starr was about to show her to the students. For the relief of a headache of which she complained she was taken aside and treated by hypnosis. On awakening not only the headache disappeared, but the entire chorea. After this a large number of choreics were treated psychically in the clinic. It was found that in some the chorea disappeared at once; in others, after a few treatments.

Syphilis probably plays no role in the etiology of chorea in children. This was shown fairly conclusively by Morse & Floyd[4] in "A Study of the Etiology of Chorea," reported in

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1916 before the American Pediatric Society. They carefully reviewed the literature on this point and added that there was nothing whatever in eighty-one per cent. of their twenty-six cases to suggest syphilis. In five cases there was a history of miscarriages by their mothers. No one of the patients, however, had been born prematurely. The blood of three of the five gave negative Wassermann tests, the spinal fluids not being examined. The blood of one was positive, but how positive was not reported; the spinal fluid was not examined. The blood of the fifth patient, whose mother had had miscarriages, gave a doubtful Wassermann reaction three times, but its spinal fluid was negative. In all twenty-six children no stigma of syphilis were found. The evidence against syphilis was strengthened by the fact that the proportion of positive Wassermanns in this series of cases was probably not so high as would be found in the average hospital class of children in Boston. In twenty-five of the twenty-six children studied, the tubereulin test was positive in twenty-one or eighty-four per cent. One might better argue on such evidenee that tuberculosis was the cause of chorea, which would be absurd.

More and more evidence accumulates to indieate that baeterial infection is the eause of chorea. A casual relationship between rheumatism and chorea has been claimed by many since the time of Bright. Osler says we find two groups of cases in whieh acute arthritis is present in chorea. In one the arthritis antedates by some months or years the onset of the chorea and does not recur before or during the attaek. In the other group the chorea sets in with or follows immediately upon the aeute arthritis. Some writers have believed endocarditis to be the cause of the disease, holding that chorea is an embolic process occurring in the eourse of a rheumatic endocarditis. This theory was first advanced by Kirkes and Osler is of the opinion that, while it has a solid basis of fact, it is not comprehensive enough, an opinion supported by post-mortem findings. However endocarditis is by far the most frequent lesion in Sydenham's chorea, the records of 73 autopsies collected by Osler showing it in 62 cases.

Morse & Floyd studied the literature with particular attention to infection. They discovered that many investigators had found bacteria in the blood of choreic patients, including staphylococcus pyogenes albus and aureus and streptococcus viridans. They found practically no data as to bacteriology. Donath found staphylococcus aureus in one case. Passini found the eerebro-spinal fluid sterile in five cases, but the fluid was under pressure and he noted relief following lumbar puncture. Timmie made a similar observation. Collins reported one case eured by treatment with an autogenous vaeeine prepared from a coccus obtained by lumbar puncture. In our ease the spinal fluid was negative. In the twenty-six cases studied by Morse & Floyd in the Children's Hospital smears and cultures from the spinal fluid were negative in every case. Blood cultures were negative in twenty-six instances. In five cases organisms were obtained. In one case it was a Gram negative diphtheroid, non-pathogenic for rabbits. In this case the tonsils were large, the teeth slightly carious and the heart normal and there were no rheumatic symptoms. Diplococci were found in smears of centrifuged blood in one case, but no organisms were cultivated. In this case the tonsils were submerged and there were several carious teeth, one of which had a pocket of pus about its root. The heart was normal and there were no symptoms of rheumatism. In two other cases short chains of cocci appeared in litmus milk in the initial culture, but attempt to subculture failed. The tonsils were normal in both cases. But the teeth were carious. The heart was normal in each and neither showed symptoms of rheumatism. In the fifth case the blood culture yielded streptococcus pathogenic for rabbits and giving slight hemolysis on blood agar plates. The teeth were carious. The patient had acute endocarditis and had had several attacks of rheumatism. Concerning this case Norse & Floyd say:

"The fact that the streptococcus obtained from the fifth patient lesions in the endocardium and joints of rabbits makes it very probable that it was the cause of the endocarditis in the child. The fact that it caused lesions in the brain and meninges of rabbits similar to those found in the brain and meninges of fatal cases of chorea suggests that it was also the cause of the chorea in the child. Further than this it is not safe to go. It must also be remembered that there was a local focus of infection in all the cases in which cocci were found in the blood and that the organisms might have been derived from this focus and have had no etiologic connection with the chorea. The absence of organisms in the cerebro-spinal fluid of all of the cases in which it was examined is also an argument against the bacterial origin of chorea, because it would seem reasonable to suppose that in a disease in which lesions are located in the nervous system the causative organism would be more constantly present and more abundant in the cerebro-spinal fluid than in the blood. The absence of organisms in the cerebro-spinal fluid and in the blood of most of the patients in this series may be explained, however, by the fact that the majority of the cases were mild or only moderately severe in type. It

is also possible that the failure to detect organisms more often, either in smears or cultures from the blood, may have been due to the fact that they are only temporarily present in the blood stream and tend to locate themselves in the meninges, endocardium or joints."

If chorea is caused by a micro-organism, Morse & Floyd argue, the source of infection is ordinarily in the tonsils or teeth. Their investigations, they conclude, tended to confirm the belief that there is an intimate relation between chorea, rheumatism and endocarditis.

To the infectious theory of the etiology of acute chorea Osler offers the prominent psychical element as one of the most serious objections, since there can be no doubt that ordinary chorea may rapidly follow a fright or a sudden emotion. The predominance of the disease in females and its onset at a time when the brain is rapidly developing are etiological facts which Sturges has urged in favor of the view that chorea is an expression of functional instability of the nerve cells. May it not be possible that the toxins of certain bacteria increase the susceptibility of central nerve cells to external stimuli, thereby increasing their instability? Certain it is that often, when these accompanying infections are cleared up, the disease seems to be greatly improved or cured.

The symptoms and signs of chorea are fully described in any standard text-book of medicine. From eight to ten weeks is the average duration of an attack of moderate severity. The tendency to recurrence has long been noted. Recovery is the rule. The following case under consideration is reported because of its rather acute onset, apparently simultaneously with "rheumatism," its associated endocarditis and its post-mortem pathology. An excerpt from the clinical chart sent to the laboratory with the autopsy permission is as follows:

Patient admitted June 24th, died July 10th. Provisional diagnosis: Chorea and mitral regurgitation. History: Mother states child was taken sick about five days before admission with rheumatism and became unable to stand alone. Later lower extremeities were involved. Had been more or less nervous all her life. No history of bite of any animal. Says little boy beat her and she had bruises all over her body. Physical examination: (Dr. Tuley) June 24th: Loud blowing systolic murmur at apex transmitted to left and posteriorly. Heart slightly enlarged. Apex beat displaced downward and to left. Examination of child while nearly asleep showed irregular muscular contractions, affecting chiefly muscles of thorax and abdomen, legs and feet, with occasional crossing of hands. July 6th: When asleep during the day has been entirely quiet. Since admission there has been great difficulty in giving child any fluids. Any attempt to swallow liquid almost produces convulsions. Foaming of mouth suggestive of rabies. This also occurs when colon irrigation is given. Spinal fluid obtained perfectly clear, but under considerable pressure at first. Bacteriological report, July 8th, (Dr. Graves): Smears negative, culture negative after three days, globulin negative. White count (Dr. Zwick) July 5th: Leucocytes 20,600. Temperature: On admission 99. Rose to 100 (axillary) on July 6th, 101.4 July 4th and continued 100 to 103 (axillary) until death. Pulse: On admission 118. Continued 84 to 102, rising to 148 on July 8th. July 9th, 152. Respirations: On admission 24. Varied between 20 and 28 until July 8th, when they rose to 60. On July 9th, 74.

The necropsy findings pertinent to the study of chorea include the following:

Body is that of a fairly well developed, rather poorly nourished white female child. Over left knee there is moderate swelling on inner surface capped with a small, superficial abrasion. Both knee joints normal.

Heart. Weight 80 gms. Along edges of mitral valves throughout most of their extent seems to be a line of very fine, colorless granulations which appear distinct through a reading glass. Other valves are normal. Foramen ovale closed. Muscle appears normal.

Lungs. Weight: Left 80 gms.; right, 150 gms. In lower left lobe posteriorly near diaphragm is a slightly raised, reddish gray area, 7 mm. in diameter surrounded by a deep purple zone. On section former extends inward 6 mm. and is bordered by purple zone 2-4 mm. in diameter. Upper two-thirds of right upper lobe is firm, purple mottled with reddish gray, has diminished crepitation and, on section, appears dark reddish gray and smooth. In lower lobe are three scattered spots similar to those in lower left lobe. Over largest pleura appears dull and reddish gray. On section outline is fairly distinct, areas extending inward about 2 cm. and presenting a bright, reddish gray cut surface. Peri-bronchial lymph nodes small and black. Bronchi slightly congested.

Spleen. Weight 20 gms. Organ smooth, purple and presents distinct markings on section in a dull red cut surface.

Gastro-intestinal. Scattered in lower ileum are dark red areas involving whole circumference mostly. In caecum are three pedunculated, pear-shaped, purplish bodies hanging from mucosa and apparently covered with mucous membrane.

Liver. Weight 500 gms. Organ pale and smooth. On section markings are distinct,

but cut surface has an ochre tinge. Gall bladder contains dark green bile.

Kidneys. Weight, 100 gms. Cortex 7 mm. thick with distinct markings. Capsule strips easily, leaving smooth surface.

Brain. Weight 1250 gms. Apparently normal, in every respect.

Middle Ear. Some pus in right.

Omitting the descriptions of the microscopical appearance of the section, the final gross and microscopical diagnosis are:

Lobular pneumonia,
Vegetative endocarditis, acute,
Toxic splenitis,
Toxic enteritis and appendicitis,
Toxic hepatitis and midzonal necrosis,
Toxic nephritis (early tubereular),
Polypoid adenoma of caecum,
Brain negative.

In connection with the brain the record of the microscopical examination appears:

Brain: Sections from blocks through cerebral cortex anterior to fissures of Rolando, across pons and of cortex of cerebellum show normal histology. Meninges, nerve cells, neuroglia structures and capillaries show no abnormality.

The bacteriology worked out by Miss Paige showed pneumococcus from the lungs and heart's blood, (septicemia 5 hours postmortem) and staphylococcus aureus with pneumococcus from the right middle ear.

This case offers several interesting features.

Apparently a typical acute chorea made its appearance synchronously with acute infection. The spinal fluid was negative for bacteria, syphilitic antibody and globulin, but was under pressure. Associated with the chorea was acute endocarditis and lobular pneumonia with marked toxic lesions in nearly all the parenchymatous organs. The postmortem Wassermann was negative. Histologically the brain was negative.

If the blood and spinal fluid are examined repeatedly bacteriologically and serologically in every case of chorea, evidence will be accumulated of great value in the study of the etiology of this disease.

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DISCUSSION:

Henry Enos Tuley: The patient mentioned by Dr. Graves was Emma DeVore, a white child, aged five years, who walked into the Hospital June 24th, 1918. The mother stated she was taken sick about June 19th, when she showed her first symptoms. Had previously been healthy, with no special nervous symptoms, no history of bite by rabid animal. There was a history of a boy beating her, with bruises developing over her body. During the five days before admission, she had pains in her joints and for several days was unable to stand alone, but improved some and walked from car into the Hospital.

On admission there was found a loud blowing systolic murmur at the apex, transmitted to left and posteriorly. Apex beat displaced downward and to left. While asleep the child showed irregular muscle contractions, chiefly affecting the muscles of thorax, abdomen, legs and feet, with aimless tossing of hands. The severity of these movements caused abrasions on elbows, heels and knees. For the first week the axillary temperature was not above 99, was extremely nervous and subject of severe muscular twitchings and contractures. On July 1st had a slight convulsion. About this time had distinct difficulty in swallowing liquids, and would foam at mouth, followed by mild convulsion. Spinal puncture done: fluid clear and escaped under considerable pressure. Laboratory report of examination of this entirely negative. Leucocyte count showed 20,600.

On the 6th, there was a rise of temperature to 100.4 axillary, with gradual rise to 103 on the 8th; stupor developed on the 9th with death July 10th.

The condition of the throat in this child was practically normal, though there was slight enlargement of the tonsils. Whether this area was the point of original infection can not be said definitely but the chances are greatly in favor of this being the case.

This patient illustrates in a most complete manner the definite association between chorea, arthritis and endo-carditis in children, as proven by the autopsy findings. Rheumatic infection, and we believe definitely that chorea should be classed with this infection, is responsible for the majority of infantile and childhood heart disease.

Poynton in his article on "Observations on the Nature and Symptoms of Cardiac Infection in Childhood" proves this statement conclusively. He has isolated a strepto-diplococcus from the tonsils of a patient suffering from acute rheumatism and tonsillitis which produced carditis and arthritis experimentally. This proves that the infection may gain access to the body by way of the tonsils, adenoids and nares.

A clinical fact of significance is that there may be in rheumatism in children a minimum of joint and muscle symptoms and a maximum of endocardial or myocardial changes. These joint and muscle symptoms when associated with tonsillitis or chronic nasal discharge calls for a careful investigation of the heart.

The effect of a rheumatic infection upon the nervous system, resulting in an attack of chorea is not generally recognized, and further, the usual trend is to look upon a choreic attack as an en-

tity and not associate it with rheumatic infection at all. Chorea may manifest itself in many ways, from extreme nervousness and restlessness, slight muscular twitchings, to violent muscular jactitations. There is present in these children a group of symptoms which in an adult would be called a neurasthenia. Rectal temperature will usually show a slight rise, there is generally an adenitis especially about the neck, anemia, increased number of leucocytes, and general wasting, and a definite heart lesion, practically always at the mitral valve, producing either a direct or indirect murmur.

Skin manifestations in rheumatism and chorea are possible. These are usually described under the generic term of erythema. Among other lesions seen are purpura, angio-neurotic edema, urticaria, pruritus, lesions known as erythema nodosum, seen upon the extensor surfaces of the legs, especially in children, are very similar to the rheumatic sub-miliary nodules found in the heart muscle, also known as the Aschoff bodies. Cheadle says, "in the acute rheumatic fever of children when the nodules are many and large they have an ominous association with progressive endocarditis and pericarditis of the most serious kind: they indicate a grave danger, a carditis which is uncontrollable and advances almost invariably to a fatal termination."

Thalheimer and Rothschild state that the "submiliary nodules of Aschoff are present in rheumatic myocarditis and are characteristic of rheumatic infection,"—and here the most significant proof of the close relationship of chorea and rheumatism, "the nodules were found in 3 cases of chorea without joint manifestations."

W. E. Gardner: While chorea is essentially a medical affection and belongs more to the internist and the pediatrician than the neurologist, there are certain manifestations which demand recognition from those interested in neurology. The disease more frequently occurs between the ages of five and fifteen years, and for that reason the pediatrician sees the greatest number of cases. Unquestionably chorea nearly always follows or accompanies toxemia; it is frequently associated with rheumatism or develops as a sequel to infectious disease. As indicated by the essayist there is evidently a toxin which acts upon the cerebral cortex, the larger motor neurons particularly, and which causes the characteristic choreic movements. In some cases of chorea even paralysis occurs due to involvement of the lateral columns of the spinal cord.

Hereditary predisposition is probably a factor in the etiology, especially the existence of neuroses in the immediate ancestors. For instance, a child whose immediate family history is instable is more susceptible to toxic influences than a child with a normal history. Overwork and overstudy are exciting causes which suggest the importance of instability and individual predisposition as etiological factors. The rapid subsidence of symptoms under enforced rest and quietude also emphasize the influence of the nervous make-up of the child in the development of chorea. Children with chorea are often anemic and poorly nourished; such cases are seen most frequently among the poorer classes. The patient should be well nourished and kept as quiet as possible.

While it may not be pertinent to the paper to speak of the medical treatment of chorea, there is one drug that has seemed to act almost as a specific, i.e., aspirin. This drug has been recommended and used in a great variety of affections, but it seems to have a remarkable effect in chorea, especially when associated with tonsillitis, influenza, rheumatism, or other infectious disease. Fowler's solution is now used much less frequently than formerly. It is claimed Fowler's solution controls the spasmodic arrhythmical movements of chorea by producing a temporary arsenical neuritis, whereas aspirin seems to act more as a specific. It has been remarkable how the symptoms in some cases have subsided from the administration of this drug continued for several days.

It has been said that treatment instituted late in the disease is more likely to be beneficial; and this is explained by the fact that chorea ordinarily reaches its height within four weeks, and treatment at that time seems to produce more prompt results. This is a feature which must not be overlooked in estimating the value of any form of treatment.

B. C. Frazier: I have recently seen very few cases of chorea compared to former years, and have thought it may be due to the fact that nearly all children are now having their adenoids removed. I would like to ask whether there is any etiological relationship between the development of chorea and hypertrophy of the adenoid tissue in the naso-pharynx.

B. J. O'Connor: In the case reported the original infection appears to have been followed by otitis and chorea. While the history was atypical, pneumococci and staphylococci were found in the middle ear which was probably the focus of infection. It is extremely likely that in every instance the manifestations of chorea and also so-called rheumatism are due to systemic absorption of bacteria. The focus of infection may be located in the tonsil, teeth or elsewhere.

J. D. Heitger: I wish the essayist would tell us whether the accessory sinuses were involved in the case reported. My reason for asking this question is that during the last few years in the chorea of children presumably due to focal infection in the naso-pharynx, it has been noted that in a certain number of instances when the adenoids and tonsils were removed there was rapid improvement; whereas in other cases, more or less chronic the operation was followed by no improvement. In the latter instances it was

shown that the primary focus of infection was in the sinuses.

Stuart Graves, (Closing): It is probable that in many cases infection occurs through the channel mentioned by Dr. Heitger. Infection beginning in the naso-pharynx, mastoid or sinus may give rise to endocarditis and other manifestations noted in chorea, rheumatism, etc.

The point made by Dr. Gardner is worthy of emphasis. In many instances chorea develops in children who have an inherited nervous instability. Where such predisposition exists bacterial toxins seem to have a greater influence upon the nervous system of the child; that is, in patients who are by inheritance instable there seems to be an increased susceptibility of the nerve cells to external stimuli.

ANEURYSM OF THE LEFT SUBCLAVIAN ARTERY; CASE REPORT.*

By Ben Carlos Frazier, Louisville.

Two weeks ago a male of forty-eight came to see me with his neck bandaged. He was much emaciated and cachectic in appearance and looked like a man who might be seriously ill. Examination disclosed a large tumor of the neck which extended downward over both clavicles slightly larger on the left side where there was an area which looked as though it might rupture at any time. The entire tumor was pulsating, the diagnosis of aneurysm seemed certain, and I thought the man was in great danger. He said he had been treated by several physicians and only within the last few weeks had he been told that he was in a serious condition. I advised him to go home and remain quiet, and to take care of himself physically. He is a carpenter and cabinet maker and until a short time before had continued his work. I told him he was likely to die from rupture of the aneurysm if he lifted heavy weights, climbed up and down ladders, etc.

Ten days later the patient returned when the reddened area already mentioned had opened and there was a free discharge of sanguinolent material but no fresh red blood. The discharge continued for several days and finally ceased, a scab forming over the opening, after which he said he felt better. At my second examination the pulsation was not quite so marked as before and the man was less depressed. Knowing of nothing better to do I gave him twenty drop doses of Burnham's soluble iodine three times a day and advised him to remain quiet and avoid any form of excitement.

He returned a few days ago and seemed to be feeling considerably better. I then took him to Dr. D. Y. Keith's office where the roentgenographic plate exhibited for your inspection was made. The patient promised to come to the meeting to-night, but was evidently unable to do so.

The first time I saw the patient I was almost sure he had an aneurysm of the aortic arch, but a more careful examination upon his second visit showed that the left subclavian artery was involved. The fluoroscopic examination merely revealed the large shadow which can be plainly seen on the X-ray plate. The most interesting feature is that the left clavicle has been almost entirely destroyed by the process of erosion.

The patient gives a history of syphilis twenty years ago for which he says he was treated only a few weeks. He has been conscious of pulsation in his neck and has had pain in the upper part of his chest for about a year; and during that time has consulted five or six different physicians. One claimed to be a specialist in this line of work and told the patient he could do nothing for him, that he must be very careful of himself or he probably would not live very long. He had also consulted a chiropractor who refused to treat him, which I think is very commendable.

The patient has lost flesh, he is emaciated and feeble, and of course his condition is very grave. I am sorry he is not here to-night to be shown as the case is very interesting.

DISCUSSION:

D. Y. Keith: Little information was obtained by the roentgenographic examination in this case. The plate merely shows a large shadow and the area of the tumor is probably greater than indicated by the roentgenogram. The extensive erosion of the left clavicle is plainly visible in the plate.

In connection with this case I wish to exhibit another plate which shows an aneurysm of the aortic arch. While the tumor is smaller the out lines are much plainer than in the plate of Dr. Frazier's case. In addition to the aneurysm the patient had gall stones for which he was operated upon by Dr. Wathen. No trouble whatever was noted during administration of the anesthetic. Several months later he consulted Dr. I. A. Lederman saying he had lost his voice; and this has happened on three different occasions since. This man was living about a month ago, although he is much emaciated and in a serious condition.

C. H. Harris: In the case reported there seems to be some question as to the location of the aneurysm. I believe aneurysm of the left subclavian artery as large as this is quite rare and I am inclined to think the arch of the aorta is involved.

*Clinical Report before the Jefferson County Medical Society, January 6, 1919.

The emaciation of the patient may be explained by pressure on the thoracic duct. When there is sufficient pressure on the thoracic duct to prevent the emptying of nutriment into the subclavian vein emaciation occurs.

B. C. Frazier, (Closing): I am unable to explain why the patient has had no voice symptoms, swelling of the arm, etc. His blood pressure has not been taken so far as I know. He has been able to work part of the time, and says if "he was not afraid he would die any minute, as he has been told by several doctors, he could do as much work as anybody." He is able to walk about, his appetite is good, and he sleeps well. He has five healthy children the youngest three years old; his wife is healthy and so far as he knows she has had no miscarriages.

METASTATIC ABSCESSES FOLLOWING ISCHIO-RECTAL ABSCESS.

EXTENSIVE SUPPURATION OF BUTTOCKS FOLLOWING A BURN.*

By Bernard Asman, Louisville.

Case I. The first patient exhibited is a male, aged about fifty years, who was admitted to the Louisville Public Hospital December 1st, 1917. His appearance at that time indicated that he was critically ill. He was extremely weak, profoundly toxic, and suffered greatly from pain in the region of the rectum.

Examination disclosed a very large ischio-rectal abscess which had evidently existed for a considerable time, and for which he had received no treatment. His condition seemed so critical that it was questionable whether he could withstand even a minor surgical procedure, but it was finally decided to thoroughly open the abscess. At that time the patient was almost moribund.

A free incision was made over the most prominent part of the abscess, a large amount of foul smelling pus liberated, and adequate drainage established. He had a rather "stormy" time for several days, then began to show some evidence of improvement; that is, his strength increased, and his general appearance improved, although he was still profoundly toxic.

About a week after the operation he began complaining of soreness and stiffness of both hands. Swelling of the joints soon supervened, the pain increased, redness appeared, and the tentative diagnosis of infective arthritis was made. It was not suspected at first that the joint involvement was in any way connected with the ischio-rectal abscess. However, a few days later the presence of pus was detected in each hand, and multiple incisions became necessary for its liberation. At the expiration of a week an abscess appeared in the left elbow joint, which was also incised and the pus evacuated. The diagnosis was then changed to multiple metastatic abscess following the original abscess in the ischio-rectal region, which according to my observation and experience is an exceedingly rare condition. The infection in this instance was undoubtedly carried through the blood stream. While metastatic abscesses of the internal organs such as the liver, lung, etc., not infrequently result from infection of remote structure the occurrence of metastatic abscesses in the superficial tissues must be rare.

It will be noted that the general condition of the patient is now fairly good, and his ultimate recovery seems assured. While his hands are still somewhat crippled, the purulent discharge has ceased and the incisions have practically healed. The hand which was most extensively involved still shows some swelling and stiffness, but the deformity noted in one of the fingers did not result from the recent infection; that finger was broken several years ago.

The ischio-rectal incision has about closed, and the patient now complains of no pain in that region. As the man expects to leave the hospital to-morrow, I thought it would be interesting to the members to show him to-night.

Case 2. The second case possesses some points of peculiar interest, which I will mention briefly. The patient is a negro about forty-five years of age, who gives the history that two years ago while engaged in cleaning the flues of a steam boiler, the steam was turned on by mistake and he sustained an extensive burn of both buttocks. This was followed by infection and considerable sloughing of the tissues.

A rather interesting feature is the unusual quantity of dense scar tissue which is now present. The tissue is very hard and appears to be over an inch in thickness. The infection has persisted for two years, and the patient has refused treatment until now. It is my intention to excise this scar tissue to-morrow, and I thought it would be interesting to show the patient before the operation.

In answer to a question as to what are the indications for opening or excising the scar tissue, I will say that it is honeycombed with fistulous tracts. While thorough excision of the deeper scar tissue may leave a large open wound, unless that is done good results cannot be expected.

*Clinical report with exhibition of patients before the Jefferson County Medical Association, February 11, 1918.

DISCUSSION:

A. D. Willmoth: What was the nature of the ischio-rectal abscess?

Bernard Asman: The ischio-rectal abscess contained streptococci, staphylococci, and also some colon bacilli. Unfortunately the laboratory report is not available at this time and I am therefore uncertain as to the character of the pus found in the local abscesses. I believe, however, that the infection must have been staphylococcal in character; had it been due to the streptococcus I doubt very much if the patient would have been here to-night.

Louis Frank: Did the fistulous tracts result from the burn?

Bernard Asman: Yes, the original lesion was an extensive turn, which was followed by infection and sloughing of the tissues. The sinuses now present evidently extend into the ischio-rectal fossa.

C. C. Leachman: Are these fistulae complete or incomplete?

Bernard Asman: They are complete in the sense that some of them extend into the rectum, and as will be observed there are several external openings.

A. D. Willmoth: What did the blood examination show in the first case reported.

Bernard Asman: The blood examination showed diminution in the red blood cells and hemoglobin, and of course considerable leucocytosis.

A. D. Willmoth: How long was it after the ischio-rectal abscess was opened before the patient had the first metastatic abscess?

Bernard Asman: About a week after opening the ischio-rectal abscess the man began to complain of pain and stiffness of his hands, followed almost immediately by redness and swelling. The hospital internes, and also Dr. Haach who saw the patient for me, were at first under the impression that the hand involvement was probably "rheumatic" in origin. When pus formation later occured, of course the diagnosis was changed to metastatic abscesses. The fact that the patient was so profoundly toxic, and that prostration was so marked when admitted to the hospital, suggests the probability that blood infection had already occurred. A few days later the infection became localized, and the metastatic abscesses developed.

Indoxyl in the Urine.—The results of Cantelli's research suggest that indoxyl is not a normal constituent of the urine, and is not present in certain forms of sickness. But it was found in some cases of appendicitis and of occlusion of the colon. This apparently indicates that the indoxyl in the feces is of autochthonous origin, dependent on special conditions in the bowel resulting from partial or complete closure of the lumen.

A FEW REMARKS ON HEADACHE.*

By Samuel G. Dabney, Louisville.

I wish to briefly consider ocular and nasal headache and their differential diagnosis.

First: Ocular Headache may be due to inflammation in the eye or its adnexa or to eye-strain. When inflammatory the etiology is generally clear yet it is well to remember that dull aching in the head or possibly shooting pains may be among the prodromal symptoms of glaucoma, and the two other prodromata, namely momentary blurring of vision and the seeing a ring of colors around a light, may be slight or absent. In that very different type known as acute inflammatory glaucoma we find violent headache—often a severe hemicrania and attended with nausea and vomiting. I have twice seen distinguished physicians, one especially conspicuous as a diagnostician, mistake this disease for so-called bilious headache.

The pain from corneal ulcer is generally referred to the eye while that from iritis or cylitis is often equally or more marked on the affected side of the head. It is well to remember that these inflammations generally come from some constitutional condition and this may itself be a cause of the headache.

Similarly glaucoma is more prone to occur in arterio-sclerosis and we must consider its relation to pains in the head.

Far more common is headache from eye-strain—generally due to errors of refraction and occasionally to disturbance of the extra ocular muscles. Of the refractive errors astigmatism either alone or with myopia or hyperopia is the most important; hyperopia next and simple myopia last in causing headache, though in the higher degree, especially, it causes aching and tire of the eyes.

For accurate examination the accommodation should be suspended in persons under forty as a rule and occasionally past that age.

Headaches from eye-strain may be classified as follows, in the order of their frequency: First, headache in the brow and through the temples, most marked after close use of the eyes or exposure to bright light. Second, aching back of the eyes or just over them. Third, occipital headache (by some thought to indicate especially muscle imbalance). Fourth, rarely one-sided headache with or without nausea. These unilateral headaches whether or not of the typical migraine type are rarely cured by glasses; and yet we sometimes see decided benefit from them. Fifth, equally or more rarely does eye-strain cause pain at the top of the head.

*Read before the Jefferson County Medical Society.

The sick stomach either with or without headache may occasionally be caused by ocular defects is true, and glasses may in some cases be worthy of trial but the prognosis should be guarded, and other causes diligently looked for. It is known to oculists but perhaps not so well known to other physicians that eye-strain is most likely to occur with perfect vision and often with slight errors; in the larger defects the eyes are not strained and the sight is poor. To this rule, however, there are many exceptions, especially in youth.

Though it is asserted that the headaches from the eyes may "vary from mild frontal discomfort to violent explosions of pain affecting any part of cranium," my own experience does not accord with this. These violent outbursts of pain, severe enough to put the patient to bed, are rarely caused by eye-strain.

Even of headaches typical of eye-strain and accompanied by defects enough to produce them, not all will be cured by glasses. Among the contributing and often more important causes are: neurasthenia, high blood pressure, with or without nephritis, toxemia from various causes, brain tumor and cerebral syphilis.

The association of eye-strain and neurasthenia is common—in those cases sometimes called retinal asthenopia and sometimes retinal hyperasthesia in which the eye tires almost instantly—with any glass during examination and the patient complains of eye ache even when the accommodation is suspended, such general nerve tire may be suspected.

However, typically ocular the headaches may be in these cases glasses give only partial relief at best. The general physical and especially the psychical condition of the patient must be carefully examined.

The headache of chronic nephritis is well known, yet it is not very rare for the oculist to be consulted for glasses and to be the first to detect in the fundus oculi almost positive proof of Bright's disease. In other cases, the tortuous retinal vessels, the flattening where these vessels cross and perhaps retinal hemorrhages point to high blood pressure.

Headache of brain tumor "may be dull aching and continuous or sharp stabbing and paroxysmal; it may be diffused or localized." I can recall several cases which hoped for relief from glasses in whom the ophthalmoscope showed choked disc and operation or postmortem revealed tumor of the brain.

Cerebral syphilis may be manifested by headache, optic neuritis and vomiting just as in brain tumor, but sometimes there may be headache followed by dizziness or delirium or an epileptic convulsion. Pupillary disturbances and ocular paralysis are often seen and frequently there is change in mind or character.

It should be remembered that even normal eyes may be strained and cause headache if used to excess or by poor illumination, and that lack of exercise, constipation and that vague condition known as rheumatism may all affect both eyes and head.

As regards errors in the balance of the extraocular muscles the limits of my paper permit me to make only two remarks: First, the least common but the most important of these conditions is disturbance in the vertical motions—so-called hyperphoria. A vertical prism worn constantly sometimes gives great relief. Second, the most common is insufficiency of the internal recti—not generally helped by prisms or other glasses and very often part of a general neurasthenia.

Nasal headache may be caused by disease within the nasal passages or naso-pharynx or by disease of the accessory sinuses.

Among intra-nasal causes enlarged middle turbinate (often cystic) stands first. Few operations so quickly and easily done give such relief as resection of the middle turbinate; the relief being due to removing the pressure on the septum and to better drainage of the adjacent sinuses. Deflected septum especially in its upper portion may cause headache in the same way.

Nasal polyps may also be mentioned here but they so often accompany sinus disease as to always suggest it.

Chronic hypertrophic rhinitis is an occasional cause of headache.

In children adenoids may produce the same symptoms, though it is usually less conspicuous than the other well known symptoms.

Acute sinus affections are not likely to be overlooked, but it is well to remember that the location of the pain is less valuable than tenderness in pointing to the sinus involved. Thus the pain from inflammation of the antrum may be referred to the brow. Chronic sinus affections may easily be overlooked— sometimes the symptoms they produce are typically ocular and yet the only relief is obtained by intra-nasal surgery. In ethmoid disease particularly such cases are not rare.

Pain from the sphenoid is often referred to the top of the head, and that from the frontal sinus recurs so regularly in the forenoon that it may be confused with malaria.

DISCUSSION:

J. J. Shafer: The subject of headache is of general interest and offers a wide field for discussion. By close co-operation between the internist, neurologist, and the opthalmologist, the cause of headache can usually be definitely determined, the majority of cases giving a well-defined history with adequate supporting proof.

In ocular headache the patient usually complains of orbital pain. In headache induced by improper use of the eye, hypermetropia, astigmatism or muscular imbalance will usually be found. Such cases are relieved by corrective lenses. In accessory sinus headache there are also definite anatomic land-marks which are supported by roentgenoscopic findings. Anemic headache and vertigo are supported by a low hemoglobin scale and low white blood count. Nocturnal syphilitic headache is generally occipital and is supported by the Wassermann plus. Cardio-vascular and renal headaches are also occipital and are supported by the circulatory hypertension, casts and albumin in the urine, etc. Gastric, toxic and uterine headaches are supported by the findings of the chemical laboratory, the roentgenologist, the gynecologist, and the internist.

A. O. Pfingst: The specialist is prone to see the cause of all types of headache through the eye of his particular specialty. However, I believe that ophthalmists and aurists probably see more cases of headache than internists and other specialists combined.

Ocular headache is generally relieved by sleep. The individual who uses his eyes all day is apt to complain of headache towards night, and after a night's sleep, either normal or drug induced, he is usually relieved. This rule is not constant for some headaches of eye origin may be present upon arising. On the contrary when headache is due to nasal or accessory sinus obstruction, the individual usually awakens with a dull pain in his head. In such cases the headache is always worse during the morning hours and may leave entirely during the day.

Dr. Dabney did not sufficiently emphasize the fact that high errors of refraction do not generally cause headache. An individual whose vision is only 20-70 or 20-50 with a high degree of astigmatism may not suffer with headache as such eyes seem to make no effort to improve their function through muscle effort whereas one with a slight error may have intense headache. In other words the fact that an individual has vision of 20-20 does not signify that his headache may not be due to his eyes. Slight astigmatic errors against the rule are the most frequent cause of eye headache. Such patients are generally relieved by the application of proper glasses.

J. H. Heitger: There is one severe type of headache which Dr. Dabney did not sufficiently emphasize. In some instances after the internist has thoroughly examined the patient and excluded the various general etiologic factors, after the patient has been repeatedly refracted and no error of vision found, after the gynecologist has made a negative report, still the patient continued to suffer from periodic headache. Such attacks are usually labeled migraine, the patient is given the comforting information that his headache will probably subside when he reaches the age of fifty or sixty years, and that ends the diagnosis.

It has been shown (Sluder) that so-called migraine is due to irritation of the spheno-palatine ganglion. It will be recalled that this gonglion supplies the mucosa of the nose and accessory sinuses, that it has a connection through the ciliary nerve with the eye, and with the cervical plexus through the cervical sympathetic system. The investigations of Sluder and others have done much to reduce the number of cases of so-called migraine and place them in the category where they belong; they have also demonstrated that patients with this type of headache may be relieved before reaching the age of fifty or sixty. The course of the cranial nerves being through bony canals, irritation produces swelling and pressure with resulting pain or headache. The most frequent type induced by such nerve irritation is hemicrania or migraine. After the patient reaches the age of fifty or sixty years osteoporosis supervenes, the bony canals become larger, and pressure no longer occurs. This is given as the reason why so-called migraine disappears when the patient arrives at the age stated. This type of headache is rare in children under seven years, but is occasionally noted and results from anatomic defect.

Another type of headache is associated with closure of the frontal sinus and the production of a vacuum within this sinus due to hypertrophy of the middle turbinate and anatomical defects of the middle meatus. The patient has a dull frontal headache which is usually aggravated when the eyes are used to excess due to strain of the superior oblique muscle.

In the latter type the treatment is merely a question of getting ventilation into the frontal sinus. Spheno-palatine headache can be arrested within a few minutes by the application of a ninety-five per cent solution of cocaine directly over the spheno-palatine ganglion.

S. G. Dabney, (closing): Needless intra-nasal operations are often performed, and needless glasses prescribed, in the attempted cure of headache. This is not intended as a criticism of anybody in particular, as I also plead guilty to the charge.

I wish to say, gentlemen, that I do not believe migraine can be cured by an intra-nasal operation, nor by the application of glasses. The most plausible theory of the etiology of migraine is that it is due to some disturbance of the cerebral circulation; and there are many causes which may produce such disturbances. I have recently had under observation a case which seemed to confirm this theory: An elderly female had suffered many years from migraine with the three typical symptoms: hemicrania, nausea and ocular-disturbance, in her case hemianopsia, as years went on the headache and nausea ceased, but she has continued to have spells of "half-sightedness." Finally one of these spells resulted in permanent

loss of vision in one-half of each retina, hemianopsia, suggesting first spasm then perhaps thrombus in cerebral vesicle. The most common mistake of the oculist is to expect too much of glasses, and a similar error of the nose and throat man is to expect too much from intra-nasal surgery in the treatment of headache.

Dr. Pfingst is mistaken in one particular: I mentioned the fact in my paper that headache occurred from small errors because the patient strained the eye to overcome them; that patients with large errors do not strain the eyes and therefore do not have headache from that cause. This, however, does not apply to youthful patients. In them the ciliary muscle may be so active as to overcome even a large defect and the patient has perfect vision. Slight defects are the most common cause of ocular headaches in the adult.

The point made by Dr. Pfingst about sleep is a good one, and I agree with him that most ocular headaches are temporarily relieved by sleep either normal or drug induced. However, the headache usually recurs the next day when the eyes are excessively used.

With reference to Dr. Heitger's remarks concerning headache produced by frontal sinus vacuum: I am quite familiar with the writings of Sluder, but this idea was not original with him, it was first suggested by a man in New Orleans. It is well known that pressure from a thickened middle turbinate will produce headache; in fact, I think it is far the most common cause of nasal headache. However, it seems a needless stretch of the imagination to claim that headache in such cases is produced by a vacuum in the frontal sinus. The headache is readily relieved by resection of the turbinate thus overcoming the pressure, and this is probably the most useful of all minor intra-nasal operations. Personally, I think it far more likely that headache is produced, by intranasal pressure than a vacuum in the frontal sinus!

Dr. Heitger gives a higher limit of age than generally stated when improvement of migraine may be expected to occur. The limit is given as fifty by the majority of writers.

Every ophthalmist is probably familiar with the views of George M. Gould on eye strain as a cause of migraine and other forms of headache. He advanced the very plausible theory that the disappearance of migraine between forty and fifty was due to the fact that accommodation then became less active and eye strain much less severe, but general clinical experience does not confirm this view.

There is much more which might be said on the subject of headache. If my paper had a purpose, it was merely to show how frequently we make mistakes in treating patients suffering from the various types of headache.

REMOVAL OF A PIECE OF STEEL FROM THE EYE.*

By Adolph O. Pfingst, Louisville.

On October 18th, 1918, at noon, J. W. T., age 40, referred by Dr. William Cheatham, consulted me regarding an injured eye. He gave the history of having received the injury an hour previously. While straightening some saw teeth with a pair of forceps a piece of steel from one of the teeth flew into his right eye. Since the injury he was able to see several small bubbles, (as he described them) before his injured eye. He had suffered no pain and there was no disturbance of function.

Examination revealed a very small area of redness over the sclera about 3-16 of an inch to the nasal side of the cornea. The vitreous humor was clear, containing no blood, but showed three perfectly round bodies, giving the appearance of air bubbles in glycerine. No foreign body was visible. Tension was slightly lowered. Functional examination showed the right eye practically the same as the left, patient reading the 20-20th line readily.

The X-ray examination made by Drs. Keith & Keith with the Sweet's localizer soon after my examination revealed a small foreign body low down in the anterior quadrant of the eye.

The man was sent at once to the infirmary and by three o'clock was ready for the application of the giant magnet. Under cocaine anesthesia a small incision was made over the sclera at the point of redness exposing about a quarter of an inch of the sclera. Notwithstanding a careful search, the point of entrance of the foreign body could not be seen. It was then decided to remove the object by making a counter puncture at the point localized by the X-ray. A small incision was made in the sclera with a keratome a quarter of an inch from the edge of the cornea in the medium line and below the cornea. The point of the Haab giant magnet was applied to the incision and as soon as the current was turned on the very small piece of steel was removed. It was less than 1-8 inch long, very narrow and flat: The conjunctival wounds were punctured.

This man made uninterrupted recovery and when he returned to work two weeks later, had perfect vision and all of the parts of the eye had returned to normal. When last examined, December 10th conditions were unchanged.

Foreign body cases of this kind are not un-

*Clinical report read before the Jefferson County Medical Society, January 20, 1919.

common and the individual case would hardly be worthy of report, but this case has some unusual features which make it instructive and interesting. A very uncommon feature was the presence of the air bubbles in the vitreous and the absence of blood. It was also worthy of note, that the wound of entrance was not visible three hours after the injury. The localization of the foreign object with the X-ray, its easy removal with the magnet and the very acute vision after the injury before and after the removal of the steel are also noteworthy features.

I attribute the result in this case to the fact that we were able to localize the body and remove it within three hours following the injury and that it was removed with little traumatism.

DISCUSSION:

S. G. Dabney: My experience differs from that of Dr. Pfingst in regard to locating the point of entrance of a foreign body into the eye. It is quite common for a foreign body to penetrate the sclera and be entirely covered within a short time so it would be impossible to detect the point of entrance.

Not all cases terminate as favorably as the one reported by Dr. Pfingst; and while suggestions may seem out of place where a favorable result has been secured, my preference is to make an opening further backward than one-fourth inch from the sclero-corneal junction.

The most satisfactory case of this kind I have ever treated was a male of twenty sent to me from Lexington, Kentucky, whose left eye had been destroyed by the kick of a horse when he was four years old. The day before I saw him he had received a piece of steel in his remaining right eye. Vision was somewhat reduced, perhaps to 20-100 when the patient came to me. Following my custom I sent the patient immediately to Dr. D. Y. Keith for roentgenoscopic examination. The foreign body was localized about three-fourths inch behind the cornea and had ranged slightly downward and outward. The boy was operated upon at six o'clock that evening and the foreign body found exactly where located by Dr. Keith.

In operating upon cases of this kind I follow a plan that I do not remember to have seen recommended in text books, viz., I cut the external rectus muscle loose and dissect up tenous capsule, which permits the eye to be freely rotated, and make my incision further backward than stated by Dr. Pfingst. In the case just mentioned this plan was followed and almost as soon as the magnet was applied the piece of steel "popped out." The muscle is then drawn over the incision which not only protects it but holds the edges firmly in apposition. The muscle and conjunctiva are then sutured. The patient I have mentioned made an uninterrupted recovery with perfect vision, which was fortunate as he had only one eye. I saw him eight months after the operation and he still had normal vision.

I believe the procedure of cutting loose the external rectus muscle has two or three advantages. It allows free rotation of the eye, it affords better coaptation of the scleral wound, and thus prevents infection.

G. C. Hall: The result obtained from removal of foreign bodies in the eye are much better now than they were ten or twelve years ago. The most important items to be considered in handling these cases are: First, accurate localization of the foreign body, and second the best method of approach to secure removal. The reports to-night seem to favor posterior approach through the sclera, and that is the preferable method where the foreign body is located far posteriorly and where there is not a recent wound of the cornea through which the foreign body may be removed. Where the foreign body is located anteriorly, however, I think the anterior method of approach is preferable.

The question of the ultimate fate of the eye in the foreign body cases is important, but one about which we are unable at present to speak with any degree of positiveness. To illustrate: A few months ago I saw a man with a piece of steel in his eye who had received no attention for five days; he had an active iritis and a very painful eye; the foreign body had passed through the cornea, the iris and upper part of the lens. After roentgenoscopic examination Dr. Keith stated he thought the foreign body had gone entirely through the eyeball and was outside. At operation this proved to be absolutely correct; but the man had a badly infected eye, and I gave an unfavorable prognosis. He was kept in the hospital for two weeks, then allowed to go home with instructions to report immediately if his eye became painful. He came to see me a few days ago and examination showed the iris entirely free with vision of 6-12 and outside of a small scar he had no deformity. On the other hand, last summer I saw a man who did not know he had a foreign body in his eye. He consulted me for failure of vision in one eye which had gradually increased for several weeks. Examination showed two spicules of iron in the lens of the right eye toward the anterior cortex which were removed through the dilated pupil without any trouble by use of the magnet. However, the lens became completely cataractus and the patient lost the vision of that eye six weeks subsequently, due to swelling of the lens and acute secondary glaucoma.

J. D. Heitger: Foreign bodies in the eye are frequently overlooked by the patient for a considerable time and treatment is delayed in consequence. Some time ago I saw a man, who, while repairing a steel saw the morning before, felt something strike him in the eye. He consid-

ered the matter so trivial that he continued his work during the day. At two o'clock in the afternoon the next day I extracted a wide piece of steel which looked like an old-fashioned Indian arrowhead. I could find no point of entrance through the cornea, around the limbus, or in the sclera. The man recovered with useful vision.

In removing foreign bodies from the eye I use the Gradle ring magnet which permits more perfect control than does the ordinary giant magnet. In the case just mentioned the foreign body was drawn outward to the posterior border of the cornea with the magnet and an incision then made to accomplish removal. In this way the minimum amount of trauma is inflicted.

A peculiar feature about eye injuries is that there is no possible way to predetermine what the ultimate result will be. In serious injuries the outcome is sometimes favorable, whereas in what seems to be minor cases loss of vision follows.

J. J. Shafer: As the other speakers have intimated we must acknowledge that credit is due the roentgenologist for accurate localization of foreign bodies in the eye, and were it not for his assistance the ophthalmic surgeon would encounter greater difficulty in accomplishing the extraction of such foreign bodies.

A short time ago a boy was admitted to the hospital with the history of having been "shot at" by a playmate with a "BB" gun. There was intense ciliary injection when he reached the hospital. We instilled atropine and made a careful examination of the eye ground. On the nasal side the vitreous was very hazy, the retina was studded with minute hemorrhages, but no evidence of a foreign body could be found. Roentgenoscopic examination was then made which localized the foreign body in the orbital wall on the nasal side. Removal of the bullet was accomplished without difficulty and the boy made a satisfactory recovery. The retinal hemorrhages were probably due to contusion and from the forcible impact of the foreign body against the sclera.

We should be exceedingly careful in our prognosis in cases of foreign bodies in the eye, although the operative result at the time may be brilliant. This edict has been handed down to us by our forefathers in ophthalmology that when a foreign body gets into the eye there is great danger that in the healing process the retina may be incorporated in scar tissue resulting in detachment of the retina. Or we may have increased ocular tension, staphyloma, degeneration of the vitreous, and ultimate destruction of the eye. After the removal of a foreign body the patient should be instructed to report at frequent intervals to the ophthalmic surgeon for further observation.

A. O. Pfingst: In closing I will speak only of the history of the magnet for removal of foreign bodies from the eye. It is well to recall that the magnet antedates the X-ray. At the time Haab introduced the magnet all foreign bodies were removed through the wound of entrance. The wound was enlarged, the magnet applied, and regardless of the amount of trauma inflicted, an attempt was made to remove the foreign body at that point. Quite frequently removal could not be accomplished even through a good sized opening due to the failure of the body to return through the track of entrance.

Haab's idea was to get the foreign body forward and then remove it through the cornea. We now try to extract the foreign body posteriorly, and I think this is the secret in our success with these cases in later years. We do not attempt to drag the foreign body across the ciliary body, iris etc., but after localization by the X-ray we make an incision and extraction is accomplished with the least possible trauma.

As to the ultimate result in the case reported: Although this was a very small foreign body, we worked very close to the ciliary region, and I would not say that this man's eye is safe for quite a while, because degeneration frequently occurs long after the foreign body has passed through the eyeball.

S. G. Dabney: Quite recently I was shown a medical journal published in 1840 which contained an article showing where some doctor in Maryland had used a magnet to remove a piece of steel from the eye. I merely mention this as an interesting historical fact.

Operative Treatment of Tuberculous Glands in the Neck.—Dufourmentel reports that rapid and complete healing was always realized in his cases after excision of tuberculous glands in the neck, and he ascribes this invariable success to his routine procedure of suturing immediately without draining. In more than half of his sixty-three cases the gland burst and pus inundated the field, but his assumption that the pus in such cases is sterile was always confirmed by the healing by primary intention. The clips were removed the sixth day; the fifteenth the patient was sent away to convalesce. The scar later naturally was scarcely perceptible unless there had been a preceding fistula. Operative treatment should be preferred for men, and when there are already scars, or the glands are extremely large. He warns that the teeth and tonsils must be put in order or the glands may be infected anew.

Roentgen Examination of Gas-Filled Abdomen. The Nederlandsch Tijdschrift cites a recent article by O. Goetze lauding the instructive findings when oxygen is allowed to pour into the abdomen preliminary to roentgen examination. This he says, is entirely harmless, while it shows the viscera, diaphragm, etc., more clearly than ever before seen.

RENAL STONE IN A CHILD; REPORT OF CASE.*

By Ben Carlos Frazier, Louisville.

October 12th, 1918, I was asked to see a girl twelve years of age who was suffering with severe abdominal pain. Not being able to visit the patient promptly the mother telephoned the second time saying the child was suffering so intensely that I had better come at once. Upon arrival I found the child writhing in pain. The mother had applied a hot water bottle and also a turpentine stupe to the abdomen but no relief was obtained.

The child was very restless and complained of intense pain in the left side which radiated toward the umbilicus; occasionally she felt a twinge of pain deep in the left pelvis. Within a few minutes after I arrived she seemed perfectly easy and began to talk quietly. I was about to leave when she had another severe paroxysm, crying and screaming because of the pain. I tried in every way to quiet the child and being unsuccessful finally gave her 1-16 grain of morphine which had no effect whatever. She continued crying and after waiting forty minutes I gave her 1-8 grain morphine and she finally became quiet. This was about ten o'clock in the morning. During the afternoon the mother telephoned that the patient seemed to be suffering worse than ever and asked me to come immediately. I saw her within an hour and again found her crying and screaming, and at once administered 1-4 grain of morphine, after which she passed a fairly comfortable night. The next morning, however, pain returned and I then made a diagnosis of renal stone. After a brisk purge and high anema of saline she remained quiet for several hours.

I gave this child from 1-4 to 1 1-2 grains of morphine every day for the next five or six days, and finally took her to the hospital for roentgenoscopic examination. Morphine 1-4 grain was administered before leaving the house, and she had received a similar dose four hours previously. She complained of no pain on the way to the hospital. X-ray examination of the kidneys and bladder was negative. However, at that time there was a large amount of gas in the intestine. Calculi were sought for in the voided urine but none found. She was taken home the following day and there have been no further attacks of pain.

I report this case principally because of the large quantity of morphine which had to be administered to secure freedom from pain. I have never before seen a child and but few adults who could take such tremendous doses of morphine. She showed no coma nor stupor at any time and was able to talk intelligently; her pupils were contracted; she passed only a small amount of urine for four or five days and had to be catheterized while in the hospital; her abdomen remained flat throughout. I do not believe there was any question about accuracy of the diagnosis of renal calculus.

I have seen quite a number of cases of renal stone in children of both sexes. The most interesting case I ever had was in a girl five years old who passed fifteen small stones by the urethra. There was so much destruction of renal tissue that she had pyelitis for several months but finally recovered.

*Clinical report before the Jefferson County Medical Society, January 6, 1919.

DISCUSSION:

Leo Bloch: This child may have had an infarct which had existed since intra-uterine life. I wish Dr. Keith would tell us whether uric acid stones can be seen with the X-ray.

J. R. Wathen: In 1900 I reported the first kidney stone demonstrated by the X-ray and operated upon in Louisville. The patient was a boy about six year sold. It was an oval uric acid stone with sharp edges. Since then I have had two others in boys under twelve years of age. I have seen no such cases in young girls.

C. H. Harris: Some time ago I exhibited before this society a urinary calculus weighing 1½ ounces removed from the bladder of a boy aged twelve years, the bladder having contracted around it.

When a stone passes from the renal pelvis into the ureter the patient complains of pain along the course of the ureter and in the loin as stated by Dr. Frazier. Microscopic examination of the urine in the case reported would probably have revealed calcium oxalate crystals. Oxaluria can usually in any case be relieved by the administration of dilute hydromuriatic acid.

I believe Dr. Frazier's patient had a calcium oxalate stone which passed into the bladder, and that it is still in the bladder having probably increased in size by the addition of urinary salts.

D. Y. Keith: In answer to Dr. Bloch's question: The latest report I have seen was by a man in New York who had made chemical analyses in over one hundred cases of renal stone. In seventy-five per cent of cases the stone was of the mixed type, and he stated that pure stones of any kind were very rare. Of course all mixed stones can be seen by the X-ray.

In Dr. Frazier's case it would be advisable to have additional X-ray plates made before any operative steps are undertaken. If the urethra is large enough to permit cystoscopy thorium or silver salts should be injected into the ureter and kidney pelvis and X-ray plates made afterwards. In this way calculi may be accurately located which are invisible otherwise.

B. C. Frazier, (Closing): It would be interest-

ing to determine whether the child has a stone in the bladder, and if possible another X-ray examination will be made. In some of the cases I have seen the calculi were mixed, some were pure calcium oxalate. I have only seen one large renal stone in a young subject.

I recall one case of multiple phosphatic calculi in a boy. The late Dr. Ap Morgan Vance did a perineal section at the Children's Hospital and found four stones impacted in the perineal urethra. A fistula persisted for a long time which at the time was thought to be tuberculosis. The child died and at necropsy both kidneys were found filled with phosphatic calculi some of them as large as marbles. Both kidneys were entirely destroyed.

NEWS ITEMS AND COMMENTS

A TRIBUTE TO W. O. ROBERTS.

On the evening of January 15th at the Pendennis Club the medical profession of Louisville gave a testimonial banquet to their eminent surgeon and physician, Dr. Wm. O. Roberts.

The following physicians were in attendance: H. A. Cottell, Wm. B. Doherty, Jas. R. Cottell, J. Hunter Peake, John Wathen, J. Hamilton Long, I. N. Bloom, C. W. Karraker, A. Schachner, E. Speidel, S. G. Dabney, T. D. Finck, C. Thompson, R. B. Gilbert, J. A. Sweeney, J. T. Windell, A. V. Griswold, W. Ed Grant, Thos. Butler, C. G. Hoffman, G. Fulton, A. R. Bizot, D. Y. Roberts, C. F. C. Hancock, Jeffersonville; Horace H. Grant, Ewing Marshall, Frank Ritter, Maj. Milton Board, C. B. Spalding, Leo Bloch, A. W. Nickell, R. A. Bate, L. S. McMurtry, S. C. Frankel, G. A. Hendon, S. E. Underwood, Geo. F. Simpson, P. F. Barbour, Louis Frank, Henry Heuser, H. E. Tuley, J. R. Morrison, C. C. English, G. G. Forsee, H. J. Phillips, E. C. Redmon, Carl C. Weidner, Stafford, J. V. Prewitt, W. O. Humphrey, G. S. Coon, T. H. Baker, J. M. Morris, H. N. Leavell, F. C. Simpson and Leon L. Solomon.

The covers being laid and the guests and hosts assembled, Wm. B. Doherty, Chairman of the Committee on arrangements, read letters of appreciation, and some of regret for unavoidable absence from J. A. Flexner, F. W. Koehler, E. P. Easley, J. S. Chenoworth, J. H. Baldwin, Bernard Asman, A telegram from William C. White, Washington, D. C., expressing best wishes to Dr. Roberts and a regret he could not be present.

Dr. R. A. Bates sent the following poem:

Where ere the Roberts' way hath run
There sure has been a jolly pun,
Where ere the Roberts' care hath fallen,
There, Roberts' sunshine cured often;
There, was skill and self effacement—
"Do as you would be done by" is the
statement.
Whatever colleague hath the Roberts met
Hath parted laughing and "well met."
God bless his earthly days,
And give to more his kindly ways;
May St. Peter, at the gate,
Keep Gabriel's horn "some" late,
Though both will probably make note,
Of some good anecdote.

After these preliminaries Dr. Doherty spoke as follows:

We have met to show our appreciation of the great ability that has characterized Dr. W. O. Roberts, our distinguished guest, as an eminent practitioner of medicine, president of the Kentucky State Medical Association, a skilful surgeon and a learned teacher and professor of surgery in the University of Louisville for nearly half a century. Other gentlemen, gifted with captivating eloquence and beautiful word painting, will speak to you of his noble work in our midst. During his time no physician or surgeon in Louisville visited more patients.

He was L. & N. Railway Surgeon more than forty years and he had a large consultation practice, not only in Kentucky but in adjoining states. By his patients he was the well-beloved and highly respected physician.

In my forty-six years of practice in our city, he has been to me a true and faithful friend. I believe if Dr. Roberts should stop at any railway station in the great territory known as the Mississippi Valley, he would receive the warm handshake of a former student, who would treat him cordially and hospitably with happy reminiscences of the time when he sat on the benches of the lecture rooms of the University imbibing surgical wisdom from his teaching, or witnessing with added knowledge skilful operations performed by him as a professor in the University of Louisville.

While Dr. Roberts was a learned and able surgeon, far and above his great professional qualifications, were his amiability and charming character, as evidenced by his kindness of heart—

"What is the real good?
I asked in musing mood.
Order said the court,
Knowledge said the school,
Truth said the wise man,
Pleasure said the fool,
Love said the maiden,
Beauty said the page,
Freedom said the dreamer,
Home said the sage,
Fame said the soldier,
Equity said the seer,
Spake my heart full sadly,
The answer is not here:

Then within my bosom,
Softly this I heard,
Each heart holds the secret,
Kindness is the word."

Dr. Roberts has been a very loveable and companionable man. He was an annihilator of the blues. He sang the song of genial sunshine and warm cheerfulness wherever he went, irradiating joy, dispelling gloom and melancholy, and inciting laughter on all occasions by his wonderful fund of fun, pun and anecdotes. May he be with us for a long, long time.

There is a gentleman present, a cordial and warm friend of Dr. Roberts who was Prosector to the chairs of Anatomy, Physiology and Chemistry in the old University of Louisville and who was the first physician to teach chemistry and microscopy in the laboratory, and who not only has been a deep student of medical science and an active practitioner, but who also worships at the shrines of the goddesses of music and literature with fascinating devotion and brilliant success. I refer to Dr. Henry A. Cottell, who will now take the chair and act as toastmaster.

Dr. H. A. Cottell, Toastmaster, said:
"Love took up the glass of life
And held it in his glowing hands;
Every moment, lightly shaken,
Rolled itself in golden sands.
Love took up the harp of life
And smote on all the chords with might—
Smote the chord of self that trembling
Passed in music out of sight."

If I were to write a biography of the man whom we honor to-night these golden lines should be my text, for the life of no member of our profession, during the forty-eight years of my connection with it, so beautifully preaches the gospel of self abnegation.

It behooves me not to speak of Dr. Roberts as a physician and surgeon; for his skill in the one and mastery of the other are known to all. It is as a citizen, a husband, a father, and a friend, that we know him best. He has walked among us for more than forty-eight eventful years, enhancing the happiness of a great clientele, and literally scattering sunshine about him.

My first meeting with him was when I was a student at the old University Eighth and Chestnut, in 1871-72. Dean Bodine, my preceptor, pointed him out to me as a model and professional exemplar. "Look at that young man said he, and learn a lesson in zeal and efficiency. He is up early, and to bed late. He is just beginning practice, but he is giving to it the best that is in him, never missing a call, and never stopping to ask whether or not he shall be pecuniarilly rewarded for his labor. He is already an assured success." These words as we all know were a prophecy that found perfect fulfillment.

In my forty-eight years association with Roberts I have found him a genial companion, a sage counselor, and an ever faithful friend. What a striking figure he was in every walk of life. I see him now gowned, not aseptically, as in the surgical operating room, but in the strong effluvia of the old Dissecting Room, a group of admiring students about him listening to demonstrations of anatomy made merry by his witty remarks and charming stories. How their laughter rent the tainted circumambient air, till one would say paraphrastically with Keats:

"Whence came ye merry students, whence came ye
So many, and so many, and such glee?"
Young Roberts, gay young Roberts, follow me
Who tells with juicy jests his dry anatomy.

And then in the surgical Operating Ante--room, scrubbing and gowning aseptically, how he made his assistants happy with his prelude of jokes, before entering upon the grave and serious operations in which he was to show himself facile princeps. Not Robert Burns in quest of an "auld Scotch song," or Mark Twain on a still hunt for a comic incident or awkward situation displayed more zeal or intensity of purpose. When a funny story began to take shape in his mind his countenance would light up, then glow with rapture in anticipation of the point which when reached the narrator went off in an ectasy of delight, laughing vociferously before the listeners could chorus their applause.

But these pictures of joy have not been without pensive shades and darkening shadows, and here patience, serenity, and resignation, showed the serious side of a noble character. Twenty years ago Dr. Roberts suffered an acute attack of articular rheumatism, the most severe, and obstinate that I have ever seen. He was prostrate and could not move a limb without pain. We for a long time despaired of his recovery and feared his demise. I was with him every day during the acute stage of the affliction, and never heard him murmur or complain, and to-day, suffering, as I believe, from the after affects of that terrible disease, blinded of sight and almost bereft of hearing we find him patient, uncomplaining, serene, and resigned.

The blind poet of Paradise Lost showed no nobler spirit, as he told of his afflictions in these immortal lines:

"Thus with the Year
Seasons return, but not to me returns
Day, or the sweet approach of Ev'n or Morn,
Or sight of vernal bloom, or Summer's Rose,
Or flocks, or herds, or human face divine;
But cloud instead, and ever-during dark
Surrounds me, from the cheerful ways of men
Cut off, and for the Book of knowledge fair
Presented with a Universal blank

Of Nature's works to me expunged and ras'd
And wisdom at one entrance quite shut out."

And incidentally I might mention an instance of his kindness and friendship in my own case. When Roberts was painfully convalescing from his rheumatism, walking with crutches and in torture at every step, I suffered an attack of furunculosis. One of these comforters of Job developed in the ischio-rectal fossa. It required lancing, and I had telephoned my friend Turner Anderson to attend me. When Dr. Anderson arrived I was surprised and delighted to see Roberts in his company. He had heard of my affliction and had come painfully to my help. And here he showed his acumen in diagnosis: Anderson was of the opinion that the case was ischio-rectal abscess, but Roberts insisted, and correctly, that it was only a boil.

And now occurs to me an example of Roberts' presence of mind, and clear-headed coolness in surgical emergency. I was assisting him in a paracentesis. The patient, a woman with ascites, was in position. The surgeon drove the trocar through the abdominal wall, when lo! he saw that it carried no canula. There was an awkward pause in the proceeding, when I, wondering what he would do, heard him ask an attendant if she could bring him a goose quill. It was brought, Roberts cut it and fitted it for the emergency finishing the operation in perfect success with his improvised canula.

On another occasion, he remarked, (I being the anesthetist in a minor operation at a private house), upon the slowness with which the patient went into anesthesia, and asked to smell the bottle supposed to contain the chloroform; he broke into a merry laugh as he smelt, saying that whisky, by inhalation, could never produce surgical anesthesia." Somebody had loaded the bottle with the indigenous Kentucky beverage.

During the first ten or fifteen years of Roberts' career, there was much professional ascerbity in the air. Louisville had three, four, and sometimes five medical schools, and three or four medical journals. Rivalry among the teachers, acrid articles in the journals, petty jealousies among the rank and file of doctors, gave the town a reputation for medical quarrels and broils. Many inverted compliments were exchanged, many hard words said and written, and not a few fisticuffs and knock-downs were administered, while the duello was threatened and came near materializing in at least two cases. Dr. Roberts took no part in these rows, and maintained a serenity, and good natured popularity among the warring parties, exerting a beneficent influence which to-day bears abundant fruit in the peace and esprit de corps that so graciously characterize the profession to-day.

'Tis sweet to contemplate such a life, such a man, and such a character. Earnest, energetic, ardent in young manhood; strong, influential, successful and famous in middle age; patient, calm serene, trustful and resigned under chastening and affliction in his declining years, we "shall not look upon his like again."

The psalm of the ardent, earnest, and faithful poet Whittier he may well take to himself:

"I mourn no more my vanished years:
Beneath a tender rain,
An April rain of smiles and tears,
My heart is young again.

The west-winds blow, and, singing low,
I hear the glad streams run;
The windows of my soul I throw
Wide open to the sun.

The airs of spring may never play
Among the ripening corn,
Nor freshness of the flowers of May
Blow through the autumn morn.

Yet shall the blue-eyed gentian look
Through fringed lids to heaven,
And the pale aster in the brook
Shall see its image given;—

The woods shall wear their robes of praise,
The south-wind softly sigh,
And sweet, calm days in golden haze
Melt down the amber sky.

That more and more a Providence
Of love is understood,
Making the springs of time and sense
Sweet with eternal good;—

That all the jarring notes of life
Seem blending in a psalm,
And all the angles of its strife
Slow rounding into calm.

And so the shadows fall apart,
And so the west-winds play;
And all the windows of my heart
I open to the day."

Sanos sospitare aegresque sanare! (Heal the sick and take care of the well).

As I stand here I seem to be looking down a vista: I see men, horses, and munitions of war. Now some are toiling over snowy mountains, now some are laboring in desert lands. I hear the names of battlefields and wars. Hohen-Linden Austerlitz, the fires of Moscow, the repulse of Leipsic, and the destruction of Waterloo. What is the inspiration? the Old Guard. The Old Guard: the faculty of the grand old school, the University of Louisville, is in my mind. I saw their pictures to-day: Bodine, Bell, Bayless, David Yandell, Lunsford P. Yandell, Jr., Palmer,

Parvin, Crowe, Holland and Cowling. All gone into the shadows save one: Holland. If he were here to-night we should hear a specimen of the eloquence that came from the mouths of that incomparable group of men. He has, however, a good representative in one who for many years labored and taught in the old school. Dr. R. B. Gilbert will speak for the Old Guard.

R. B. Gilbert: Mr. Toastmaster: You ask me to answer to the toast of "The Old Guard!" That famous body of French Soldiers were ob literated at the Battle of Waterloo, over one hundred years ago and as I was not in Napoleon's army, I cannot speak from a personal knowledge of that "Old Guard." If, however, by the term "Old Guard" you mean that famous body of men that were battling in the fore front of Medical teaching in the West and were garrisoned in that time-honored fort-like building whose thick walls, four square, with her bold front vestibule guarded by those massive stone columns, situated at Eighth and Chestnut street,—if it is that body of men to whom you refer to as "The Old Guard," of which our beloved guest whom we are honoring to-night, was a distinguished member; and you, Mr. Toastmaster and myself were doing duty as new recruits,—I will try to say something in answer to the toast.

To speak of the great love and esteem that we all have for Dr. Roberts would be superfluous, I can only endorse in the fullest sense all that has been said by those who have spoken before me Dr. Roberts was always congenial and pleasant, easy to get acquainted with, and before you knew it, he made you feel as if you could approach as a boon companion—such in brief was the open-hearted and congenial Dr. W. O. Roberts.

My first acquaintance with Dr. Roberts dates back in the seventies. I had then just moved to Louisville to make it my home, and having but little to do I spent much of my time at the University Clinics. Dr. Roberts at that time was the Demonstrator of Anatomy, he also, during the summer months, conducted a daily clinic in the old Dispensary.

After having been acquainted with the doctor a few weeks he asked me how I would like to be assistant demonstrator of anatomy along with him. I told him I would be delighted to have the position and would cheerfully do the work as best I could for what I could learn. He replied promptly and told me he would have my name put in the Catalogue, which was done.

One of Dr. Roberts' noble traits of character was his sympathizing interest in young medical graduates and young doctors who had recently moved into the city. The spirit of professional rivalry and jealousy found no lodgment in his big heart.

One of the most difficult problems that the demonstrators of anatomy had to deal with in those days was that of procuring enough dissecting material. We had large classes in those days and it was against the law to rob a grave. One of the Ten Commandments says "Thou shalt not steal." The demonstrator had due regard for that commandment, but our greatest trouble was brought about by not being always able to observe the eleventh commandment, which is "Thou shalt not be found out." It was getting found out that constituted the crime of "body-snatching" which gave us trouble.

I will relate a little incident that will show how we were put to it about dissecting material. As was said before, we had no lawful right to get dissecting subjects even from Potter's Field. So we had to work secretly, indeed work in the dark. On one occasion we had procured the body of a negro man by means known only to demonstrators of anatomy. The subject had been a member of the Hod Carriers' Union, and some members of his lodge visited the grave in the Potters' Field on the following Sunday. They found to their surprise that the grave had been opened and the body removed.

The colored population were greatly wrought up over the matter and they began at once to try to find out who had stolen the body. Suspicion naturally pointed to the dissecting room and the demonstrators of anatomy at the University. A committee of colored men called on us to learn if we could throw any light on the subject. We, of course, flatly denied any knowledge of the matter. It was then that they visited the newspaper reporters to whom they related their suspicions as to who they thought did it, even giving the names of the demonstrators.

I got "wind" of the trouble about nine o'clock at night and immediately I called on Dr. Roberts and told him what was up. He said, yes, he had heard of it also, but what could we do about it.? We went to see Dr. D. W. Yandell for advice. He advised us to go at once to the newspaper offices and get them to keep it out of the papers.

We went to the Courier-Journal office and called on the reporter, Mr. Ed Colgan, who was busy writing up a sensational account of the affair. We asked him not to put it in the papers, but he said it was too good to suppress and could not do it. We then went to the Editor-in-Chief, Colonel Watterson and pleaded with him to shield the demonstrators. He called Colgan to his room and said to him, "Cut that matter out." We thanked Mr. Watterson and bid him "Good-night." We next went to the office of the Louisville Commercial, a Republican paper then being published by Ben Ridgeley and Young E. Allison. After we had begged them not to print anything about the matter, and also telling them how generously the Courier-Journal treated us, Mr. Allison seemed to sympathize with us and drew us out as much as possible as to the facts in the case, then placing his hand behind his ear said, "Why, doctors, I would not suppress a

piece of news for Jesus Christ! Dr. Roberts looked dejected and I felt bad and we left.

The paper had a full column of sensational matter the following morning. No serious trouble came of it, however.

The Toastmaster: "Thou shalt not be afraid for the pestilence that walketh in darkness nor the destruction that wasteth at noonday."

As one who has done nobly the arduous duties of the official sanitarian during the most fatal epidemic that ever visited our city, our efficient Health Officer, Dr. T. H. Baker will now speak.

T. H. Baker: When honored with an invitation to join the profession in a testimonial to Dr. W. O. Roberts, I most gladly accepted it, ignorant, however, of the penalty attached: namely, to address this splendid assemblage of doctors, and I had not the slightest intimation in advance that I should be called upon to speak. Otherwise, I should have prepared an eloquent impromptu speech for the occasion. I don't often attempt to speak in public, for the good and sufficient reason that I can't think on my feet, and my hearers are to be congratulated because I am aware of that fact myself, and seldom attempt it.

It has been many years—I am not willing to say how many—since I sat at the feet of Dr. Roberts and other able professors at the old University at Eighth and Chestnut streets, Roberts was then the friend and the confident of all us boys: he was one man to whom we could go with our troubles and perplexities, and not only have our puzzles solved cheerfully and plainly, but we could leave him with a smile on our lips and love in our hearts, because upon nearly every occasion Roberts had in stock, a new and amusing anecdote at which we not only laughed at, but laughed with him because all of you know the hearty cackling laugh that Roberts himself always had on tap. Ouchterlony—transcendently brilliant man that he was—was so gruff in his demeanor that were always afraid of him. Yandell in those days was approachable only if his breakfast agreed with him. Palmer would invariably stray off into fields entirely remote from the subject. Cottell—long may he wave—has not only read every line of poetry that has ever been written, but more wonderful is it that he remembers all of it, and at that time and even to-day, he would repeat whole volumes of poetry to us unprotected boys without any provocation. Roberts, however, was the only professor who was universally popular, and we could and did come to him without apology or embarrassment confident of his assistance.

It is therefore with extreme pleasure that I bear witness in my stumbling, awkward, halting manner to Roberts, the man, the surgeon, the teacher, and to express the fervent hope for his complete restoration to health.

The Toastmaster:

"Ah what avail the choicest gifts of heaven
When health and drooping spirits go amiss.
How tasteless then whatever can be given—
Health is the vital principle of bliss."

I call on Dr. Henry Enos Tuley, the dean of the University of Louisville, one of its alumni, the successor of the eminent Bodine, the Superintendent of our Hospital, the graceful and accomplished physician to respond to this toast: "Medical Schools and Hospital":

H. E. Tuley: Mr. Toastmaster and Gentlemen, and our Honored Guest:

It is indeed an honor to be introduced as the Dean of the University of Louisville and to stand as the successor to Bodine, Evans and Grant.

We do honor to-night to a distinguished teacher, one who made his impress upon me when I first attended the University nearly thirty years ago. He was genial, yet serious, considerate yet thorough, consciencious in his work and a brilliant clinician.

I can well recall my experience in the green room. Dr. Ouchterlony was the first member of the faculty before whom I appeared. One of my classmates who preceded me had put a sign upon the door when he left his room, "Abandon hope all you who enter here." It was with mixed feelings that I entered his room, not knowing when I finished whether I had passed or not, and it was with a heavy heart that I went next to appear before Dr. David Yandell for my examination in surgery. There was no such sign on Dr. Yandell's door but I felt one should have been for I abandoned all hope. Much to my relief I was told Dr. Yandell had gone to pay a call and Dr. Roberts was to examine me.

Perhaps because I was always present at Dr. Roberts' clinics and lectures on the first row impressed him with the idea. I should know it all, and he talked of everything but surgery and passed me all right.

I was greatly pleased when I learned this dinner was planned for Dr. Roberts. It is proper that we should do him this homage, and I am proud to have been present.

The Toastmaster: "Iatros gar anna pollon antaxios allon," said Nestor on the bloody field of Troy when the beloved Macchaon was about to be left to destruction. "A surgeon in battle is worth more than many soldiers."

I ask the eminent surgeon, Dr. Geo. A. Hendon to respond to this toast.

G. A. Hendon: Mr. Toastmaster and Gentlemen:

It is a source of great pleasure for me to felicitate Dr. Roberts upon this happy occasion. I am happy to be here; I am happy to see such a large gathering of mutual friends, and it makes me happier still to see Dr. Roberts looking so well

and making such a fair bid to attend numerous other occasions of like character. I am reminded by Dr. Roberts' physical appearance that if this meeting has been arranged for his valedictory it is manifestly premature. At the same time it surely must inspire in Dr. Roberts feelings of the deepest self-gratification that after so many years of active and strenuous effort he is permitted the physical evidence of the fact that he has achieved renown and at the same time has won the undying affection of his contemporaries in the same sphere of activities and the same field of endeavor as his own. Unfortunately I can not claim the distinction of being a contemporary of Dr. Roberts but I claim the honor and feel proud to have played Paul to his Gamelial for a period extending over quite a number of years. My association with him has been that of pupil and teacher. Consequently my acquaintance with him has been limited to a knowledge of his traits that involve the relationship already alluded to. It gives me pleasure to publicly declare that as a result of his teaching it has been my fortune to profit in material ways and on numerous occasions by his precept and his example. As a teacher of surgery I have always held him in most high esteem and feel for him a profound reverence. One of the chief characteristics that he has always shown toward his students has been that of inveterate accessibility. No student was ever reluctant to seek his aid and advice; no student ever felt abashed in his presence; no student ever felt humiliated by the vast difference in their relative positions; always easy of approach, always genial, he invited the repose of confidence and was never known, either by word or facial expression to betray impatience or irritation with his fledglings in surgery. No man ever parted from a personal conference with Dr. Roberts unless he felt the warmth and the genial glow of his unselfish spirit. Famous he was as a raconteur; his stories always had the aptitude of illustrating the point and always possessed the virtue of a wit which outweighed any real or fancied vulgarity.

When I received an invitation to be present to-night I felt very much honored and when I was invited to contribute to the festivities of the occasion through parts of speech, I felt embarrassed by the high distinction. I must, therefore, express my gratitude at being present and indulge the hope, which has a material foundation, that Dr. Roberts will be with us to grace by the charm of his presence on many more similar occasions.

The Toastmaster: "Art is long, time is short, opportunity fleeting, experience deceptive, and judgment difficult" said the father of medicine, and on this foundation millions of earnest men have labored from the day Hippocrates till now—each contributing his mite to the splendid superstructure.

Holding no insignificant place among these workers is our most distinguished Kentucky surgeon, "native, and to the manner born," the successor of McDowell, in whose town he was born.

Dr. Lewis S. McMurtry, president of the University of Louisville, ex-president of the American Medical Association, and the famous laparotomist will now address us.

Lewis S. McMurtry: Mr. Toastmaster: I am sure that when you and Dr. Doherty first spoke to me regarding a complimentary dinner to Dr. Roberts by his professional friends we had no thought that such a large company would be gathered as is assembled around this board tonight. As it became known that such a dinner was contemplated the number increased upon individual initiative until this goodly company was assembled. Without solicitation many expressed their desire to honor Dr. Roberts, and if our colleagues now absent in military service were at home, this large room would scarcely accommodate those who would gladly join us. Could there be a higher or greater compliment than such a spontaneous tribute to the life and labors of our honored guest than such a testimonial from his colleagues, associates and friends of the medical profession in the community where his entire life has been lived. It means that he has attained success of the highest order; that to professional ability and energy have been joined a high sense of honor and a generous and kindly nature.

With one or two exceptions, all the preceding speakers were associated with Dr. Roberts in their student days. It was not my fortune to know Dr. Roberts in that relationship, and we were both graduates when we first met. He was on his wedding journey in New York, while I was pursuing post-graduate studies there, and Dr. Virgil Gibney and I called on him and his bride. When a few years later I came to Louisville to live, he received me cordially, invited me to his home and a friendship was formed which has grown throughout all these years. In our professional work we were often brought together, sometimes as competitors, but always with the best of feeling and mutual respect and regard. Of late years our friendship has been intimate.

It is a great pleasure to me to be here this evening and tender Dr. Roberts my congratulations and affectionate good wishes. His career teaches especially one great and valuable lesson, and that is, to win success in an active professional career it is not necessary to tear down or undermine one's associates and colleagues: for real permanent success is based upon individual merit, with justice and fair dealing to all. Such is the quality of my friend Roberts' success, and I congratulate him and wish him many years more to enjoy the happiness of his home and the esteem and regard of his legion of friends.

The Toastmaster:

"Ah, me, how good it is to live
One with abounding day,
To be no longer fugitive
On life's down-darkening way;
But part on portion of the light
To rise again new born,
Beyond the shadow and the night
Annointed of the morn."

And now our most honored guest, and dear friend will talk to us.

W. O. Roberts: I regret exceedingly that my deafness prevented my hearing anything that was said by any of the speakers who preceded me. However, I know all of them to be my true and tried friends and I am therefore, satisfied that my reputation did not suffer in their hands.

I wish I knew how to thank you for the honor you have done me. Words are simply inadequate to convey my deep gratitude for this expression of your friendship and esteem.

When I look back, after giving up work and see how many of my friends are still in the field, it gives me great delight.

When I came here to-night I expected to be met by a good handful. So you can imagine my great surprise and gratification when I was received by such a large number, every one of whom I have been associated with in one way or another, while in active practice. And in shaking hands and greeting you, I became almost overpowered with emotion, and tears came to my eyes.

Forty-eight years is a long time to be in constant practice. During that time I have seen a great many changes take place in both medicine and surgery. As all of these are familiar to every one of you, it is unnecessary for me to recount them. However, there is one change which I wish to speak of. It does not refer to either medicine or surgery, but to the relations of the individual members of the profession to each other. There was a great deal of animosity, bad feeling amounting some times to actual hate, existing. This was, I thought brought about by the rivalry in different schools—this rivalry extending to the members of the faculties and to the alumni in the city and throughout the state and the adjoining states. Go where you might, every alumni you met, would be sure to ask if Dr. So and So and Dr. So and So were as bitter enemies as ever. During all these stormy times, no blood was spilt and no personal encounter took place. A close watch was kept upon every one and if any one was found violating the Code of Ethics, charges were preferred against them before the State Medical Society. The trial of these cases took up so much time that it brought about a reorganization of the society. A House of Delegates was formed before which all personal and ethical matters had to be tried and decided—nothing but scientific papers coming before the body of the Association. This soon put a stop to their preferring the charges. During those stormy times a Demonstrator of Anatomy in one of the rival schools sent a challenge to the Demonstrator in another school to meet him on the Field of Honor. The challenge was accepted and the principals with their seconds and surgeons repaired to the Tennessee border, having kept a profound secret the time and the place. The proceedings had gone so far that the principals were at their posts, pistols in hand, waiting for the count to fire, when a tremendous yelling was heard in the immediate neighborhood which caused every one to look in the direction from which the noise came. Thy saw a two-horse vehicle loaded with men coming at a break-neck speed—the men waving their hats and yelling "Stop! Stop! In the name of the law, Stop!" which had the desired effect. When the vehicle arrived on the spot, the men were found to be well-known Kentuckians, friends of both principals, with General Simon Boliver Buckner as spokesman. After a conference with the duelling parties, the trouble was amicably settled, the principals shook hands and they all returned to the city in good humor.

Soon after that, a prominent surgeon, head of his department in one of the schools, sent a challenge to another prominent surgeon, head of the department, in his school, but before the receiver had time to answer it, a messenger with a note was sent by the challenger, asking that he be permitted to withdraw the challenge and apologizing for having sent it, stating that he was "in his cups" at the time or it would not have occurred.

I am glad to see that this ill feeling has practically died out, and that we are all living now in harmony and good fellowship.

I must thank you again, gentlemen, for this honor. I wish to thank your committee for the very pressing invitation to my wife and daughter to attend. They were anxious to come, but in thinking the matter over, they came to the conclusion that they would be "de trop," that you all would enjoy yourselves more without the presence of two women, so they decided to forego the pleasure. I want you all to know that I love each and every one of you and I shall always look back to this night as one of the happiest of my life.

The Harrison Act, as amended by the new War Revenue Act, will be mailed postpaid to any druggist, physician, dentist or veterinarian who will send a postal request therefor to "Mailing Department, Parke, Davis & Co., Detroit, Mich." Please observe directions strictly. This will be a very valuable pamphlet for physicians.

The Council of National Defense authorizes the following:

Early in February each physician in the United

States exclusive of those who served inthe Medical Corps of the Army for the past two years and members of the Volunteer Medical Service Corps, reeeived a communication from the Counеil of National Defense, requesting that he fill out and return promptly to the Washington offiee an accompanying questionnaire, so that there may be on file in Washington complete individual information covering the members of the profession Simultaneously with the distribution of these questionnaires, state and county representatives of the Volunteer Medical Serviee Corps were instrueted to urge all doctors in their communities to eomply promptly with the request of the Council to fill out and forward promptly to Washington the blanks sent them; and to advise those who by any chance failed to receive blanks, to communicate with the Counеil of National Defense at onee in order that application blanks might be furnished them.

The Volunteer Medical Service Corps was organized early in 1918 to serve the Government during the emergency of war. As this emergency has ceased to exist, aetive membership in the Corps is no longer solicited. However, the survey initiated by this organization last year has proved of such value as a source of information concerning the individual members of the medical profession that the Surgeons General of the Army, Navy and Public Health Service have requested the Council of National Defense to complete it so as to include every doctor in the country, in order that a permanent record of the profession may at all times be available for reference in future emergencies. Upon their completion, the records will be transferred to the Surgeon General's Library where they will be kept up to date by a force assigned for the purpose, and be accessible to all government bureaus.

Every physician is requested to cooperate with the Counеil of National Defense in making this record complete by returning at once the questionnaire received or by writing to the Medical Section of the Council of National Defense, Washington, D. C., and requesting that a blank be sent if through an oversight he did not reеeive one.

THE FORUM

THE HORRORS OF GONORRHEA IN ONE POOR FAMILY.

Viper, Perry County, Ky., Sept. 25, 1918.

Dr. J. N. McCormack,
Bowling Green, Ky.

Dear Doctor:—

I notice that the venereal cases of the country must be reported. As this county has no health board working, I take the privilege to report this to you direct. There was a case of gonorrhoea on this Creek for three years with the result that three of the children and father lost an eye each. Lucky for them, neither of them lost both eyes. Infected by direct contact, sueh as using towels and sleeping together. So in this same family some of the children are infected with syphilis. I have not examined the parents. So another family of old people, grandparents of these children, are both infected. I have had occasion to examine these old people. The old man is in a serious condition; they are poor and very ignorant people and do not realize their condition.

I inform you of these conditions and await your reply. I remain

Yours as ever,
G. W. Campbell, M. D.

To the Editor:

The Medical Officers of the U. S. Army have shown that mortality from Pneumonia occuring after measles or influenza, or without previous illness, due to type one infections, has been reduced from 30 per cent to approximately 7 per cent by the use of anti-pneumococcic serum.

Army Medical Officers have also found that pneumonias following measles or influenza, caused by streptococci, in many cases are cured by the use of anti-streptococcic serum prepared from horses immunized with streptococci chiefly of the hemolytic type.

It is believed that the use of anti-pneumococeic serum, type one, and anti-streptococcic serum, for the treatment of pneumonia, has been so well established that, to quote Major Niehols—"No patient with type one infection who dies without the early intravenous administration of large amounts of type one serum can be said to have received the best treatment."

The season for pneumonia has now begun, and the number of cases may be expected to greatly increase during the next two or three months. I am therefore taking the liberty of bringing to your attention the value of the two above-mentioned sera for the treatment of pneumonia. Both of these sera are administered intravenously in doses of 50cc. to 100cc. repeated in from 8 to 12 hours as indicated.

I shall be very glad indeed to send additional information to any physician in regard to the method of treatment and diagnosis of these two important infections.

Very truly yours,
John F. Anderson,

Director of Research and Biological Laboratories, E. R. Squibb & Sons, New Brunswick, N. J.

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COUNTY SOCIETY REPORTS

Breathitt—The Breathitt County Medical Society met February 3rd and elected officers, paid State dues, and made arrangements for a banquet in the near future.

The Committee on Arrangements for social features appointed were as follows: O. H. Swango, D. H. Kash, and Wilgus Bach.

Officers for the year 1919, were elected as follows:

President, O. H. Swango; Vice President, D. H. Kash; Secretary and Treasurer, Wilgus Bach; Delegate to State Association, M. E. Hoge.

Having had practically all the doctors in the service, and the health situation being much improved, the doctors are able to care for all the unfortunate ones.

O. H. Swango was discharged from the U. S. Army only a few weeks ago. We have still in the service, Earl Moorman, Luther Bach, and B. M. Brown, and H. C. Sarver. H. L. Biggs was discharged several months ago.

WILGUS BACH, Secretary.

Carlisle—The Carlisle County Medical Society met at Bardwell in W. L. Mosby's office, on December 31st, with the following members present: Drs. W. L. Mosby, R. T. Hocker, R. C. Burrow, H. T. Crouch, G. W. Payne, and T. J. Marshall.

G. W. Payne read an excellent paper on "Management and Treatment of Influenza." It was a very fine paper and came at the right time as we were in the midst of the epidemic at its worst. The paper was thoroughly discussed by all present.

T. J. Marshall, who was appointed Secretary pro tem, was called away and Dr. Payne appointed in his place.

R. C. Burrow read a good paper on "Winter Remedies." It was very good as it told of the value of a number of drugs that are useful through the winter months. For lack of time, Dr. Burrows paper fas not discussed.

Election of officers as follows: President, W. L. Mosby, Vice President, R. C. Burrow; Secretary, J. F. Dunn, reelected; Treasurer, G. W. Payne, re-elected.

It was moved and carried that we have all-day sessions as we did before the war.

R. T. Hocker, acting president, delivered a brief retiring address.

The following members paid their annual dues: Drs. Mosby, Burrow, Crouch, Payne and Hocker.

The next meeting will be held at Arlington on the first Tuesday in March.

There being no further business the society adjourned.

G. W. PAYNE, Secretary.

Christian—The following officers were elected at the annual meeting: J. W. Harned, President; J. L. Barker, Vice President; Philip E. Haynes, Secretary-Treasurer; P. E. Haynes and F. M. Stites, Delegates; R. L. Woodard and W. S. Sandbach, Alternates.

Dues were collected from twenty-three members.

P. E. HAYNES, Secretary.

Fulton—At the annual meeting of the Fulton County Medical Society the following officers were elected: J. M. Hubbard, president; R. N. Whitehead, vice-president; J. A. Phelps, secretary-treasurer; S. Cohn, delegate, C. A. Wright, alternate; W. D. Henry, G. L. Major and J. M. Alexander, censors.

J. A. PHELPS, Secretary.

Henderson—The Henderson County Medical Society met in the office of Drs. Jones & Cosby on Monday evening at 8 o'clock, December 30, 1918, Vice President Floyd in the chair.

There were present J. H. Letcher, Floyd, Quinn, Forwood, Griffin, Cosby, Ligon.

Minutes of previous meeting were read and approved. Upon motion duly seconded, and carried, the following officers were elected to serve for the year 1919:

President, George M. Royster; Vice President, Ira D. Cosby; Secretary and Treasurer, Peyton Ligon; Delegates, W. S. Forwood, Wm. M. Floyd; Alternate, E. N. Powell; Censor, Silas Griffin.

Motion made and carried that the society requesting J. H. Letcher and Peyton Ligon to read papers or discuss offhand the subject of "Influenza," at the first regular meeting of the society on January 13, 1919.

Motion made and carried that the physicians of the city of Henderson invite the physicians of the county to be their guests at a banquet to be served on Monday evening, January 13, 1919.

G. M. Royster, Cosby, and **Ligon** were elected a committee to arrange for the banquet.

By motion duly seconded and carried, the society accepted the invitation of Drs. Jones, Cosby and Griffin to hold their meetings for the year 1919 in their office.

The society adjourned to meet again, January 13th, 1919, at 8 o'clock.

PEYTON LIGON, Secretary.

Lyon—At the annual meeting the following officers were elected:

C. H. Linn, president; J. H. Hussey, vice-president; W. G. Kinsolving, Secretary-Treasurer, D. J. Travis, W. G. Kinsolving, delegates; D. J. Travis, A. D. Purdy, L. P. Molloy, censors.

Dues for every member of the society were collected. There being no further business the society adjourned.

W. G. KINSOLVING, Secretary.

Lawrence—At the annual meeting of the Lawrence County Medical Society the following officers were elected: D. J. Thompson, president; J. O. Moore, secretary-treasurer. After collecting dues the society adjourned.

J. O. MOORE, Secretary.

Leslie—At the annual meeting of the Leslie County Medical Society the following doctors were present: G. W. Campbell, D. F. Hamilton, C. A. Eversole, H. W. Gingles. The following officers were elected: G. W. Campbell, President; D. F. Hamilton, Vice President, and H. W. Gingles, Secretary. Every doctor in the county eligible to membership has paid his dues, and this year promises to be the best in the history of our society.

H. W. GINGLES, Secretary.

Madison—At the annual meeting of the Madison County Medical Society the following officers were elected for the ensuing year: J. W. Scudder, President; H. C. Jasper, Vice President; J. G. Bosley, Secretary-Treasurer; D. J. Williams, Delegate; J. H. Rutledge, M. Dunn and H. G. Sandlin, Censors.

Twenty-four doctors paid their dues.

J. G. BOSLEY, Secretary.

McCreary—At the regular December meeting of the McCreary County Medical Society, held at Worley, on December 10th, 1918, the following officers were elected for the year 1919:

H. W. Fitzpatrick, president; R. M. Smith, secretary; S. S. Foster, vice president; W. R. Cundiff, delegate.

There being no other business the society adjourned to meet at Stearns, January 14, 1919.

R. M. SMITH, Secretary.

Montgomery—The Montgomery County Medical Society had only three meetings last year, the last being held in October, and was splendidly attended. We have several faithful members but some are very indifferent.

Thirteen members have paid their dues for 1919:

J. F. JONES, Secretary.

Trimble—The Trimble County Medical Society met in Bedford Monday, January 13th, and the following officers were elected. Dr. J. W. McMahan, president; F. W. Hancock, vice president; and C. P. Harwood, Secretary. Am enclosing check for the following:

J. W. McMahan, F. W. Hancock, B. O. Rand, C. C. Fix, J. H. Calvert, C. P. Harwood.

This includes all but Dr. Wright and he has

promised to join us at the next meeting. Meetings first Monday in each month. Bedford and Milton alternately.

CHAS. P. HARWOOD, Secretary.

Warren—The regular meeting of the Warren County Medical Society was held in the City Hall, Wednesday, Feb. 12, with J. H. Souther in the chair and the following members present: W. C. Simmons, J. M. Adair, Lieut.-Col. J. H. Blackburn, J. L. Neel, J. F. South, L. H. South, G. E. Townsend, E. J. Keen, J. N. McCormack.

The society passed a resolution indorsing the use of the Mayo-Rosenoy vaccine and requested every doctor to urge his patients to be inoculated.

Lieut.-Col. Blackburn gave a most thrilling account of his work in France, and answered many questions regarding his work. The society is justly proud of the Colonel's record. He entered the army as a captain but was rapidly promoted to a lieutenant-colonelcy and was put in charge of the surgical division of his hospital.

A very interesting letter and report from Battle Creek Sanitarium was read regarding E. N. Hall, and every one was encouraged on hearing the good news of his speedly recovery.

T. W. Stone has gone to Florida for a short vacation after a very strenuous winter's practice.

The society adjourned to meet March 12.

L. H. SOUTH, Secretary.

BOOK REVIEWS

A Text-Book of General Bacteriology—By Edwin O. Jordan, Ph. D., Professor of Bacteriology in the University of Chicago and in the Rush Medical College. Sixth edition thoroughly revised. Octavo of 691 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company. 1918. Cloth $3.75 net.

This book is the outgrowth of lectures given to students in the University of Chicago during the past few years. The subject is one that the writer believes should find a place in every general scientific course. Bacteriology is chiefly of professional interest to the medical student, but the subject also bears technical relations to household administration, to agriculture, to sanitation and sanitary engineering and to various industries and technological pursuits. For the general scientific student and reader bacteriology presents certain aspects that tend to widen the outlook upon a variety of human interests.

It need hardly be said that within the compass of this work an exhaustive treatment of all sides of bacteriology is impossible. The needs of the advanced worker can be met only—and that but in part—by such monumental special treatises as the Handbuch der Pathogenen Mikroorganismen, eidted by Kolle and Wassermann, and the Technische Mykologie, edited by Lafar. A general introduction to the subject, however, with some regard for perspective and with emphasis on general rather than on special questions has seemed worth attempting.

The reader who wishes to acquire greater familiarity with the subject will find some biological references given as a sort of first aid to the investigator. These include references to some articles of classic or historic interest, to some giving valuable summaries or bibliographies of important subjects and to a few in fields where investigation is very active or opinions considerably at variance. No pretension to completeness is made.

Clinical Medicine For Nurses—By Paul H. Ringer, A. B., M. D. Published by F. A. Davis Company, Philadelphia, Pa. Price $2.00 net.

The book represents the substance of lectures on medical diseases that have been delivered for several years at the Asheville Mission Hospital by the author.

The writer says:

I have been impelled to write them out, as in no text-book for nurses that I have seen did I feel that the subjects were taken up in sufficient detail, while in all textbooks on medicine there were far too many minutae for the pupil nurse to attempt to master.

The object of these lectures is to place in concrete form a fairly detailed description of the points in the various diseases that nurses will be expected to observe and interpret, and also to form a basis upon which class-room lessons can be assigned and quizzes held, the teacher amplifying as he sees fit.

It will be noted that the bacteriology and pathology of diseases, save in a very few instances, have been but sketchily traced. The main points dwelt upon have been symptoms and their meaning, complications and their detection, as far as the nurse is concerned. Physical signs have been wholly set aside. I do not feel that any nurse's mind should be burdened with their description and significance.

Treatment has been dealt with in a general manner, it being ever borne in mind that each physician has his own prefereuce for the treatment of almost every disease, and that such preference should not be infringed upon in a text book intended solely for teaching purposes by physicians with varied ideas. I do not believe that any of the principles set forth will seriously offend.

Stenosis of the Pylorus.—Razetti reports a case of stenosis of the pylorus which he says is the third operative case on record at Caracas, and the first one in which the posterior tramsmesocolic gastrojejunostomy completely cured the patient.

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EDITORIAL

HAVE YOU PAID YOUR DUES?

We trust this query will be read by every owner of the JOURNAL. Unless your dues have been paid for 1919, this is the last issue which will reach you until they are paid. Besides this, no matter how unjust the suit for malpractice which may be brought against you, the Medico-Legal Committee will not have a right to extend its assistance to you. The law is clear on both of these subjects and the officers of the State Association have no option in the matter. On the tenth day of April, a clerk goes through the Addressograph list of the JOURNAL and removes the name of every member whose dues have not been received. Under these circumstances, will you not hand or mail your dues to your county secretary to-day?

Half of our members have been in the army for the past year, and the other half have been so overwhelmed with professional obligations during the influenza epidemic that many county societies have been doing very little active organization work. On this account, Dr. McChord called a special meeting of the Council in Louisville on March 6 where this matter was carefully considered. We are all determined that 1919 is to be the banner year for the Association. It is of interest that with all the trials and tribulations through which we went last year, the membership was not reduced. The loyalty and devotion of the profession were tried as never before, and the response was so unanimous as to give us a degree of confidence in the future that we had not before had a right to.

In practically every other state, the dues have been raised this year in order to pay the increased price of printing and the wider activities of the state societies. We have been able to meet our increased costs so far because our members have so well patronized our advertisers. We should not seem to be asking them to buy advertised wares simply because they are advertised, but we do ask that our advertisers be given a fair chance. Why not give the advertiser an opportunity, and, if he can furnish the equal or better quality at better prices, purchase from him? The JOURNAL stands behind every advertiser with its guarantee for their advertised products. For example, when you want instruments, buy from Tafel, Betz or Taylor, if they can give you things just as good at a fair price, and do not buy your supplies from some Cincinnati or St. Louis concern which gives no patronage to the medical profession of Kentucky.

Please mail your dues to your County Secretary to-day.

PROVISIONS FOR COUNTY AND DISTRICT DEPARTMENTS OF HEALTH.

No feature of the consolidated health law passed by the last General Assembly means more to the people of Kentucky than the wise and progressive provisions it makes for complete health departments, with all-time health officers and one or more visiting nurses in every county, to be established by action of the fiscal courts or by a referendum vote of the people when the courts fail or refuse to do so. This makes it possible for any county in the State to abolish its present inadequate health system with the health officer upon a nominal salary or none, and practicing medicine in order to support his family, and establish in its place an organization with officials trained and equipped to administer the health affairs of the county, just as its circuit and county judges and other officials do its no more important judicial and fiscal affairs.

The law also provides that except in counties containing cities of the first and second classes, each county shall be a single health unit, the department taking over the func-

tions of both the county and all city boards of health within the jurisdiction. It also provides that two or more adjacent counties may unite to form a district health department, by joint action of their fiscal courts, or by popular vote of such counties.

The health officers and nurses of such a department must have been specially trained in the latest and best known methods of preventive medicine and sanitary science, must receive such compensation as will enable them to devote their entire time to their public duties, and that these offices shall be absolutely non-political, the tenure depending entirely upon such an improvement in administration and sanitary condition as will produce a steady decrease in the sick and death rate in the county from the preventable diseases.

The health authorities and medical profession of Kentucky have long realized that the useless annual sacrifice of health and life in every county, and in the State as a whole, is a far greater financial drain upon the people than the combined amounts paid as taxes each year into the county, municipal and State treasuries, and for the first time in our history the State has done its full part to prevent this sacrifice by placing every health agency in Kentucky under the direction of the State Board of Health, giving it full authority and fairly ample funds for conducting its greatly extended functions and, what is of equal if not more importance, by providing each county, or a combination of small counties, with such health machinery as will enable its authorities to bring the protecting benefactions of modern sanitary science to every home within its jurisdiction. It is the purpose of the health officials and organized medical profession to urge adoption of county health departments by the fiscal courts and people of as many counties this year as manifest an interest in the subject, and in these campaigns an effort will be made to show that the people of no county will get much benefit from this wise legislation without a trained health officer and at least one visiting nurse who can give their entire time and study to health and life saving work, as this county department of health provision requires they shall do.

THE PREVENTION AND CURE OF PELLAGRA.

Studies by Dr. Goldberger, of the United States Public Health Service, indicate that pellagra is not communicable and is always caused by an unbalanced diet, consisting mainly of cereals, starches, and fats, with a deficiency of the animal flesh foods and milk. Therefore it would seem that the disease may not only be prevented by a well-balanced diet, including sufficient quantities of milk, lean meat, beans, peas and green vegetables, but the same diet will cure cases of pellagra which are not too far advanced.

He recommends the following bill of fare as an illustration of the diet which will prevent pellagra, varied of course from day to day, except as to the milk, which should be on the diet list for every meal, and with the balanced ration always in mind:

BREAKFAST

Sweet milk daily.

Boiled oatmeal with butter or milk every other day.

Boiled Hominy, grits, or much, with meat gravy or milk, every other day.

Light bread or biscuits, with butter, daily.

DINNER

A meat dish,—beef stew, hash, or pot roast; ham or shoulder of pork; boiled or roast fowl; broiled or fried fish; cream salmon or codfish cakes, etc—at least every other day.

Macaroni with cheese once a week.

Dried beans,—boiled cowpeas, with or without a little meat; baked or boiled soy beans, with or without a little meat,—two or three times a week.

Potatoes, Irish or sweet, four or five times a week.

Rice, two or three times a week, on days with meat stew or beans.

Green vegetables, cabbage, collards, turnip greens, spinach, snap beans, or okra—three or four times a week.

Cornbread daily.

Buttermilk daily.

SUPPER

Light bread or biscuit daily.

Butter daily.

Milk—sweet or buttermilk—daily.

Stewed fruit—apples, peaches, prunes, apricots—three or four times a week, on days when there are no green vegetables for dinner. Peanut butter once or twice a week.

Syrup once or twice a week.

It is important to understand, according to this excellent authority, that in the treatment of pellagra medicines have little place. The only purpose that medicines can serve is in the alleviation of painful symptoms and in the treatment of complicating conditions. The sooner this is realized the sooner will the quack and nostrum vender be put out of business. The money that is now being wasted for useless and harmful medicines is well-nigh sufficient to procure for the poor deluded sufferers the food which would protect them from the disease, or to cure them after it is acquired.

INFLUENZA—TAKING STOCK.

The profession has been confronted with conditions in the last six months without parallel in its history. There have been no other epidemics so calamitous, and none occurring at a time when so many doctors were away from their home fields of labor. While the country has had ample opportunity to gauge the true worth of our profession as a result of its contribution to the winning of the war, the wonderful achievements wrought in the science of medicine and surgery, and the rapid strides made in sanitation, all products of the war-created emergencies, we must feel no less proud of the record made by those good men remaining behind, who gave unstintingly of their time and energy in handling an almost equal emergency brought about by the influenza epidemic.

So busy has the doctor been in caring for the sick, and helping to train the public in the known methods of preventing the infection, he has had little time to take stock of the toll in lives, and the great economic loss sustained by the State and nation. There is more reason for giving serious attention to the waste in lives and money, from preventable sickness, than in any other branch of organized society, as the world naturally looks to us to lead the way, and a study of this waste will probably stimulate our zeal and spur us on to renewed efforts in trying to avert the expected recurrences of the disease, or at least lessen the morbidity and mortality from it.

As it is an exotic pestilence, reaching this country only by crossing broad oceans, influenza should be classed with the distinctly preventable diseases, and if we undertook to count the cost to the State in dollars and cents, a reasonable estimate would require figures running up in the millions, as, the actual cost of sickness of the nearly five hundred thousand cases, the loss of time of those incapacitated, which not only affected the individual, but in a large percentage of cases contributed to short production in every line of industry, the funeral expenses resulting from over eleven thousand deaths, and lastly, the incalculable loss represented in those valuable lives taken from among our most useful and productive citizenry—all of these items would have to be figured, and the result would be staggering!

In this age of cold calculation, the above represents calamity, but to the doctor who is a philanthropist, and always altruistic in his life work, the greatest of all is the human tragedy, the broken homes, and the lonely firesides, and he is wont to encourage only an invoice representing the human phase. To him there is no problem so far as vital statistics of the past is concerned, but the end results of the epidemic furnish a fruitful field for future service, and he sees the problem ahead of him of guiding, and helping reconstruct those who *barely got through*, and are left stranded on the shore of physical uncertainty and must meet the tides of diseases that play on the victim of weakened vitality. So many of young adults, and of the active age were spent by the ravages of this plague, that tuberculosis, catarrhal conditions of the respiratory tract, heart and kidney affections, and the neuroses are sure to find a ready soil. In the very young, we are likely to have a much higher death rate in the next twelve months from the exanthematous diseases, as is nearly always the case following an epidemic of recurrent pulmonary infections.

With a total of over eleven thousand deaths since the beginning of the epidemic, it is a very conservative estimate to place the figures of the number of cases at four hundred and fifty thousand in the State, and only the doctors know that at least ten per cent. or forty-five thousand of these are more or less permanently disabled, and will require careful training and guidance to even partially restore the lost energy and vitality. Here is a large field for practical reconstruction and it is incumbent on the family doctor to train these folks to report to him at regular intervals for examination and advice, and his duty and obligation are plain. Let us hope that a very few of these unfortunates will fall into the hands of the charlatan and patent medicine faker, to be fed on vaunted "build you ups," which, with their alcoholic and dope contents are only helpful in prolonging the period of weakened resistence to disease.

Chronic Vasoconstriction Spots and Their Significance.—The chronic vasoconstriction spots observed in the forearms, hands and face, Tracy says, are found associated with nerve and brain lesions. One or more pigment spots are found nearby. Chronic vasoconstriction spots imply an increased flow of nerve stimuli over the vasoconstrictors involved in the production of the spot, a true hypertonia of the vasoconstrictors involved. The cause of the hypertonia of the vasoconstrictors involved in the chronic spots is probably mechanical, an enmeshment of the fibres in glial or hypertrophic connective tissue, and a consequent constant irritation of the neurons by the pressure of this tissue. The cause of the intensification of the spots observed at times, especially in idiopathic epilepsy, is probably a toxin in the blood stream, the abnormal sympathetic neurones. Cases in which peripheral nerve and cord lesions are excluded, point to an organic brain lesion.

SCIENTIFIC EDITORIALS

PHLYCTENULAR DISEASE.

We are all familiar with the clinical picture typical of phlyctennlar disease of the eye so common to childhood, viz: the intense photophobia, lachrymation, the nasal discharge and excoriation of the face associated with the appearance of oval or round nodules on the cornea or conjunctiva, or both, under local inflammatory symptoms. Although this disease has generally been looked upon by the profession as a local manifestation of some constitutional disease, the etiology has always been and is still very obscure. The frequent presence of enlarged cervical glands in phlyctennlar disease, its association with enlarged tonsils and the presence of adenoid growths in the naso-pharynx and an eczematous eruption of the face and scalp, strengthened the belief that the eye disease as well as its accompanying symptoms is but a local manifestation of some general condition and has led to the disease being known as scrofulous eye disease. All of the older text books speak of the connection that exists between scrofulosis and phlyctenular disease and point out the intermittant appearance of the eye disease during the years that the children are subject to scrofula. While most ophthalmologists have always believed that the efflorescences are due to an endogenous infection this view has not been upheld by laboratory investigation. No microorganisms have as yet been demonstrated in the nodules and cultures from the nodules have all failed to grow bacteria. Some ophthalmologists assume that the disease is of ectogenous origin on account of the superficial situation of the nodules. The treatment of phlyctennlar disease has always been directed largely towards the constitutional therapeutic, hygienic and dietetic measures being looked upon as more important in the treatment than the employment of local measures. It has been noticed that intra-nasal treatment and the removal of tonsils and adenoids was frequently followed by a cure of phlyctenular recurrence though the cause of the improvement was not understood.

At the last meeting of the A. M. A. Captain H. H. Turner of Pittsburg presented to the section of ophthalmology a very plausible explanation of the etiology of phlyctennlar disease. He believes that the disease is always secondary to a suppurative ethmoiditis. Atttention is called by Turner to the fact that the ethmoid cells, unlike the other nasal accessory sinuses, are present at birth and that their outer bony walls which form part of the inner wall of the orbit are frequently the seat of defects in continuity under which conditions the diseased mucosa of the sinuses is brought into very intimate relationship with the orbital periosteum and the lymphatic channels of the orbit and hence is brought in close relations with the surface of the eye balls. He believes that the acrid nasal discharge so common during the acute exanthematous diseases of childhood is largely the result of ethmoid disease and that obstruction in the nose to sinus drainage is an important factor in the development of phlyctennlosis. As proof of his deductions he cites the fact that the initial attacks of the disease frequently follow the acute infectious diseases.

Turner divides the causes of nasal obstruction into (1) an intrasinus secretion which is too viscid to drain and (2) a mechanical obstruction in the nasal chambers either primary or secondary. Primary obstruction within the nasal chambers proper may be due to spurs or deflections of the septum or to narrow meati, while secondary hypertrophy, may result from the presence of adenoid growths or enlarged tonsils or from a general toxemia especially of intestinal origin. Many children may be free of relapses of phlyctenules for several years and later owing to degenerative changes in the nasal mucous membrane with coincident thickening of the secretion and improper drainage may develop the eye symptoms.

As convincing evidence of the relation between ethmoid disease and phlyctennlar recurrence Turner offers the many cases of phlyctenulosis cured by the removal of tonsils and adenoids. He also calls attention to the many instances in which excellent results have been obtained by spreading the dental arch with coincident widening of the nasal chambers. As further evidences he mentions the fact that as children subject to phlyctenular recurrence approach the age of adolescence the cranial and facial bone spaces develop, the nasal cavities widen, the impediment to sinus drainage lessens or disappears and that the tendency to phlyctenular eruptions coincidently subsides. He explains those cases in which emptying the alimentary tract and regulating the diet brings about relief, in that the nasal membranes, swollen as a result of intoxication of intestinal origin causing obstruction to sinus drainage, becomes more normal upon relieving the toxic cause.

In conclusion Turner expresses the belief that the tendency to recurrence of phlyctenules can practically be eradicated by directing the treatment towards the relief of nasal and ethmoid pathology.

Adolph O. Pfingst.

SCALING THE WASSERMANN.

Since Wassermann first published his adaptation of the Bordet-Gengou reaction to the diagnosis of syphilis there has been a continued effort to improve this test so as to make it more sensitive, more reliable or less complicated. At one time the Noguchi modification had almost replaced the original Wassermann. To-day, however, we see the classical Wassermann being employed almost exclusively, although the Hecht-Weinberg and new Noguchi have some followers.

The fact remains that the serological test is still a complicated and delicate procedure; none of the five reagents are free from variations or deviations. No routine mechanical scheme can replace the necessity for experienced supervision and control. No improvement or change in the reagents has been made as yet in regard to the antigen. Methods or technique has been improved mainly in the control of aberrant factors and titrations of complement, amboceptor and antigen.

As soon as the value of the Wassermann had been established there was exhibited a tendency towards scaling the reaction. At first it was expressed only in the strength of inhibition of hemolysis in a single tube as weakly, moderately or strongly positive. Then the four tube method became popular, employing two units each of antigen and patient's serum in one tube, two of antigen plus one of serum and one of antigen plus two of serum in another pair, and one of each in a fourth. This gives a scale of 4 plus.

The desire to have a more dependable scale for comparison led to the next step, multiplying the number of tubes and varying the antigen while the other reagents were kept constant. Field's method of starting with one part of antigen in the first tube and increasing the amount to ten parts in the sixth tube met with considerable approbation. Each tube was read 0 to 3, as it showed complete hemolysis to no hemolysis, giving a scale of 0 to 18. Another method of Fields which soon replaced this grading through antigen was exactly the same except that the antigen was kept constant and the patient's serum was varied in six tubes as with the antigen. More recently the tendency is to state the strength of the reaction in terms of complement. Using a constant amount of antigen and inactivated patient's serum, plus two units of amboceptor, the amount of complement is varied in a series of tubes, sometimes starting with as little as one unit, sometimes ascending to twenty-five units. The test is read as the largest number of units of complement which the patient's serum can bind.

Varying the antigen, varying the serum, varying the complement, each has practical and theoretical advantages, each has its drawbacks. So while the tendency at present is to vary the complement the discovery of a more specific antigen may prove the variation of antigen or patient's serum is best.

M. L. Ravitch and S. A. Steinberg.

ORIGINAL ARTICLES

THE TREATMENT OF NEURITIS.*

By E. A. Stevens, Mayfield.

During the period of the war I feel like apologizing for offering a paper in no way connected with the Nation's military activity, but having been rejected as physically unfit, and not being connected with the medical corps, a paper on an indifferent subject is the best I can offer.

It is not my purpose to discuss polyneuritis but to consider those cases where one nerve, or at most the nerves coming from one plexus are involved. It is the class of cases that the general practitioner meets so frequently, many of which are hard to cure that will receive my attention.

In my work the nerves most commonly affected are the sciatic, the nerves from the brachial plexus, the sub-occipital and the trigeminal, and in this order I will consider them.

All predisposing causes should be eliminated so far as possible, such as syphilis, alcoholism, diseased tonsils, pyorrhea, and chronic constipation. I want to utter a word of protest against this renewed wave of opposition to the tonsil that is sweeping over the medical world. There is no doubt that the tonsil is responsible for some of these cases, but the tendency to place the blame on the tonsil in all cases showing evidence of focal infection just because it cannot be located elsewhere is wrong. I have my first grandmother yet to see, benefited by a tonsilectomy. Many cases come from pyorrhea and I frequently send these cases to the dentist the first time I see them.

Sciatica and neuritis of the branches of the brachial plexus usually require about the same treatment, though the nerves of the brachial plexus seem a bit more sensitive and must be handled with a little more care, and I find them a little harder to cure when involved.

The doctor who has for his clientele a large number of farmers will meet many cases of

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

sciatica. For many years these cases gave me much trouble, but now they usually submit promptly to treatment. If the case is not too long standing, or too acutely inflamed, it may not be necessary to give them absolute rest in bed, but in some of the most acute cases rest is necessary for a time.

An old maneuvre of stretching the nerve by manipulation in cases of long standing appears to do good in some people. This method is familiar to everybody, and while I have never been certain that putting a patient in a recumbent position and flexing the thigh on the abdomen with the knee straight stretched the sciatic nerve, I have had several patients tell me that their improvement commenced from that time.

As to drug treatment, I have found only two that gave me such results that I could prescribe them with confidence. One is aspirin, and I give this for immediate relief till I can get the case in a comfortable condition, and the other is gelsemium for its curative effects. I am not sure that aspirin has any curative influence. I can prescribe gelsemium for its curative effects with much confidence, for more than any other drug with which I am acquainted. I have got benefits from other drugs in an occasional case, but not in the large proportion that I do when I prescribe gelsemium. A good preparation must be administered. Many specimens of this drug are bad.

The method of giving it is important. Begin on a small or medium dose, say five drops of a standard preparation and increase one drop each day. First day five drops and the second day six drops at each dose and increase in this way till the case is relieved or until the well-known super-orbital symptoms are produced. If the physiological effects are produced before the pain is relieved drop back one drop on the dose and continue the treatment.

Along with this treatment, where practical, I use Galvanic electricity. Possibly it should be called a low voltage direct electrical current. Take the entire nerve in the circuit. Sometimes these painful or tender spots will be half way up the back.

It may seem a little stale to be writing this but as much as has been written on electricity, it is not a popular remedy with the general practitioner, nor is its use in such cases as these well understood. I believe the reason for this is that it is more or less difficult to get an electrical outfit that is dependable. If batteries are used it takes at least forty cells to give a satisfactory current. They are unsatisfactory, as they are unsightly and take a large amount of space, and when you are ready to use the current you find it out of fix, and the combination will not work.

There are later apparatuses than the one I use, but after fifteen years of experience with this outfit, I can recommend it for its simplicity, its certainty and its almost freedom from expense after its installation. It is composed of a one-sixth horse-power motor belted to a direct current sixty volt dynamo, connected to a wall plate, with a rheostat to control the current and a milliamperemeter to measure it.

The current usually recommended for these cases is one of five or six milliamperes, but with this low voltage I generally use about forty milliamperes. A current of this strength gives practically no pain. I have used static electricity and Farradic, but neither gave me any results.

In stubborn cases I have tried rest in bed with Hamilton's long splint attached to the leg involved. I have also tried firing with the thermo cautery or the electric cautery, but have usually been disappointed, and if I was not careful I would lose my patient on account of the pain I produced with the remedy. It is repulsive to most patients. I have also tried the deed injection of alcohol endeavoring to get the alcohol inside the sheath of the sciatic nerve. In a few cases I have apparently got relief from this, but one or two gave some little symptoms of paralysis after this treatment, and I discontinued it. Many other drugs have been tried by me, but the gelsemium and the electricity are by far the most satisfactory.

In inflammation of the branches of the brachial plexus this same treatment may be used, but I suggest a little weaker current than in sciatica, as the nerves are a bit more sensitive, and harder to cure as a rule. I have seen some very persistent cases affecting these nerves. In one case a drummer who traveled for many years, and who had only one hand, contracted a most painful and persistent case, involving all the branches of the brachial plexus. He had carried two grips for years in this one hand, and his trouble appeared to be due to that. He was forced to quit the road. It wrecked him and he became a confirmed invalid, suffering agonizing pain night and day. I tried all the treatments I knew but that of putting the arm at complete rest, and I suggested this to him, but as it would have made him absolutely helpless, since he had only this hand, he refused to allow the hand put up in a fixed dressing. He finally fell and broke this arm, and the surgeon put it up in plaster of Paris, and he got well of the neuritis before he took the arm out of the dressing.

I have recently seen a severe case in these nerves in a woman who had her breast and axillary glands removed about eight years ago. There is nothing yet to show any return of her cancerous trouble, but we have been able to do nothing to relieve the neuritis. The neuritis, a comparatively recent affair, did not come for a long time after the operation for the carcinoma. I want to call attention to a class of cases affecting these nerves which require a little different treatment. Those are the cases due to traumatism, more often to a punctured wound of the hand. I have seen it due to a lick over the nerve, and in one case it was due to a downward dislocation of the humerus, catching the nerves in the axilla between the head of the humerus and the ribs. The dislocation was not reduced for nearly twenty-four hours, and the neuritis came on shortly afterwards, and stayed for twenty years, or until the death of the man. In these cases there is more tendency for the tissue of the arm and hand to mat together and grow stiff and useless, than in the other cases, and massage is necessary. It is almost impossible to cure the patient without persistent and systemaic manipulation which should take the place of gelseminum.

In neuritis affecting the sub-occipital nerve, I have found that gelsemium with vibration gives the best results. Electricity never gave me any results in inflammation of the nerves of the head and face. In some very bad cases of neuritis of the sub-occipital nerve I have gotten very prompt cures with vibration and gelsemium. A few years ago I had what appeared to be a bad case of neuritis of the sub-occipital nerve, and I tried all the remedies I knew, but failed entirely, and when an X-ray picture was made of the head it was discovered that she had a sarcoma, though there was no tumor on the outside.

She went up to Howard Kelly at Baltimore, and he gave her a few treatments with radium, and she recovered rapidly. Be sure that pain in this locality is not Potts' disease in the upper cervical region, as I should expect the vibrator to make that disease worse.

This leaves for discussion neuritis of the trigeminal nerve, or tic douloureux. I had the honor several years ago to read a paper before this society on the "Deep Injection of Alcohol for Persistent Neuralgia." At that time I had had considerable experience with this treatment, but I have had more since. I have never been able to accomplish anything in these cases of tic douloureux with any of the remedies I have discussed so far. The only treatment that has given me any results has been the deep injection of 85 or 90 per cent absolute alcohol, and in most cases this will give prompt relief if the alcohol is put down to the nerve. This is a method made popular in this country by Patrick after having seen it used in the clinics at Paris and Vienna by Baudin and Levy. There has been no cases involving the first division of the trigeminal in my practice, but quite a number involving the second and third division. The relief in my cases lasts from twelve months to several years. The injection of the middle division is a little more difficult to make than the injection of the third division, I always dread to undertake it though it requires but a few seconds, and is given without an anesthetic. I will not attempt to go into details of the method of making these injections, one is injected where it comes out at the foramen ovale and the other at its exit at the foramen rotundum, but since I read my paper previously mentioned I have had some experiences I want to mention. One was with an old woman near seventy who was suffering torture with an involvement of the second division. I injected the alcohol, and it gave complete relief from the pain, but it made all the area supplied by that branch numb as usual, and she almost worried me to death about the numbness. It did no good to tell her that she would have to endure the numbness or the pain, the one or the other. She appeared to believe that if the pain could be relieved that the numbness could be relieved also. But it remained to the end and she died of pneumonia after several years complaining of her numbness to the last. I tell all these patients now that they will have to endure the pain or put up with the numbness before I give the injection, and let them take their choice.

Another case was in an old man who was the worst sufferer from this disease I have ever met who came to me after a metropolitan surgeon had done some sort of an exsection of the third division of the nerve, but it had done no good. This operation was not an operation on the Gasserian ganglion. He had involvement of both the second and third divisions, and sometime he would require injections of both branches before he would get relief.

I think I treated him for over five years. He would not come until his suffering would be so intense that he could take neither water or food without its producing an attack when ever either was put into his mouth, and I have seen him suffering for both when he would apply for aid. When one of these paroxysms would strike him he would wheel around like an animal which had been struck a severe blow on the side of his head. In a few minutes after a successful injection he could take all the food and water he wanted

without pain. I say successfully for as many as I have given I do not always succeed in placing the alcohol where it is needed the first effort. I have found two cases where I could produce numbness in the area supplied by the affected branch but I could not ease the pain, and I suppose that these are the people who should have the operation done on the Gasserian ganglion. The remarkable thing about this case just mentioned is that there has been no return of the trouble for the last eighteen months or two years though it has been returning about every twelve months, and I understand he claims to have prevented its return by the daily application of kerosene over the affected area *post hoc ergo propter hoc.*

One other remarkable case and I will close. A woman about thirty-eight years of age who has been a patron of mine for ten years moved to another county. While I was her physician she raised a large family of apparently healthy children. After she had been away for a year or two she developed a painful affection of one side of her face that appeared to be a *tic douloureux*, from which she could get no relief. I went to see her for the purpose of giving her an alcohol injection. The case presented some peculiarities, and I was in doubt about the character of the trouble, but decided to give the injection. It did no good, and she moved back to my locality and the case showed up to be specific in character though it was only on one side. Iodides did her no good, and she refused salvarsan till she was a mental and physical wreck, but after she was confined to the bed we gave it to her anyhow, and now four years later she weighs one hundred and forty pounds and is perfectly normal so far as symptoms go, in all but one thing, and that is she has the area supplied by that nerve just as numb as it was the day after the injection, five years ago.

The method advocated of treating this disease in its different locations will not cure all the cases, but it is so much more successful than the other treatments I have tried that I undertake these cases with far more confidence than formerly.

The only treatment mentioned requiring any special skill is that of the deep injection of alcohol, I would not advise any one to undertake this until he has seen it done, or had studied the dry skull closely, so he would understand its anatomy thoroughly. If he will do this, I see no reason why any surgeon should not be able to do this work with satisfaction to himself and relief to his patients.

DISCUSSION:

Bernard Asman, Louisville: I am sure every one is interested in cases such as Dr. Stevens has reported. He stated in one case of sarcoma of the brain Dr. Kelly gave a few radium treatments and the woman was rapidly relieved or cured of her neuritis. I would like to ask how long this relief lasted, and what the ultimate outcome of the case was?

E. A. Stevens, Mayfield: That was in a young woman, twenty years of age, who was a sister-in-law of another physician. Several of us treated her, and the matter of sarcoma was not suspected by me. I do not know any more than the rest of them what it was, but she finally, after two ordinary treatments, felt she had complete relief. Examination showed a tumor on the right side of the brain at this point (indicating). She was advised to go to Dr. Kelly which she did, and that was three years ago I think, or may be four years. I saw her brother-in-law a few days ago, and he told me that she took five or six treatments as long as she had the money to pay for them, and Dr. Kelly gave her two or three treatments after her money gave out. It made her quite sick every time she took a treatment; but all symptoms disappeared, and the woman seemed to be in perfect health a few weeks ago, the last time I saw her brother-in-law. I did not have an opportunity to follow up the case except through him.

W. C. Dugan, Louisville: I would like to ask Dr. Stevens if the tumor was to be seen on the outside.

E. A. Stevens: No.

W. C. Dugan: I would like to know how radium was used, whether it was introduced through an opening made in the skull.

E. A. Stevens: There was no cutting operation done, but the radium was placed in close proximity to the area of involvement. That sounds fishy, but I have the doctor's statement for it. I can give you the doctor's name if you want it.

W. C. Dugan, Louisville: First, in regard to neuritis of the sciatic nerve. I want to call special attention in that connection to subluxation or strain of the sacro-iliac joint, mistaken for sciatica. I saw a patient only recently with a neuritis of the sciatic nerve that had existed for a number of years which incapacitated him. X-ray examination and physical examination revealed that it was clearly a case of sacro-iliac disease, which was relieved by a belt. I want to call your special attention to the fact that the sacro-iliac joint should not be lost sight of as a causative factor in these so-called sciaticas or neuritides.

In the case of neuritis I want to emphasize what the doctor said in regard to the case of neuritis, that rest in bed will do them more good than any other therapeutic agent that we have at

our command. I have tried the injection of alcohol numbers of times and I, like the doctor, have been disappointed.

In regard to brachial neuritis, again I want to say rest by means of a fixed dressing, fixing the part absolutely, will enable you to get results, oftentimes when other measures have failed.

Only recently I saw a woman who had an obstinate brachial neuralgia following a dislocation of the shoulder.

In regard to trifacial neuralgia, I want to say a few words. I, too, have seen a great number of these cases. I have used alcohol and have been disappointed in this treatment. I have done many excisions of the branches of the nerves. I have got uniformly good results unless the disease is back of where you can remove the nerve. I do not regard the operation of the removal of the Gasserian ganglion as proper until you have used the alcohol treatment or the removal of the peripheral nerve as a diagnostic and relief measure. In the first place, if you can give these patients relief by a minor operation, there is no use in subjecting the patient to excision of the trifacial ganglion. If alcohol has failed to give relief, or if excision has failed to give relief, or after giving relief a number of times the trouble returns, I am sure you will be fully justified in removing the trifacial ganglion. It is an operation of considerable magnitude. I have performed it a number of times, and I have yet to see a patient fail to be relieved where the ganglion was removed. I invariably advise the operation where other means have failed.

C. W. Kavanaugh, Lawrenceburg: How do you reduce a subluxation of the sacro-iliac joint? In lumbago, where the trouble seems to come from the joint, or sometimes where it comes from a twist of the hip joint, if there is a subluxation, should we reduce it immediately, or should we attempt to go through any of the manipulations by which we put back the hip joint. Is there any way of diagnosing it?

W. C. Dugan, Louisville: In case of so-called subluxation of the sacro-iliac joint or painful conditions of the sacro-iliac joint, the diagnosis is made simply by taking a belt and putting it around midway between the crest of the ilium and and tip of the trochanter and asking the patient to walk. The patient says, "That is funny; I could not do that before." That is the way to make the diagnosis in the majority of cases. The X-ray is of great assistance in making the diagnosis. You will find there is a change in the structure of the joint.

C. W. Kavanaugh: How wide is the belt?

W. C. Dugan: Four inches wide.

H. H. Stallard: I did not catch what you said about sciatica.

W. C. Dugan: I spoke of neuritis and said the best treatment in my judgment is rest.

J. G. Carpenter, Stanford: In regard to sciatica or sciatic neuritis, it is often a symptom due to some toxemia. It may be due to rectal disease; a fibroma, neuroma, enchondroma or exostosis; it may be due to urethral strieture. You may have both chronic and subacute attacks from a toxemia plus adhesions of the sciatic nerve in its bed or muscular attachments. I have operated on cases like that and cured the patient by nerve stretching and removing the local cause. In another cases of sciatica of twenty-five years' standing, the patient had neuromatous growths pressing upon the nerves. I operated, released the adhesions and stretched the nerve and removed them and cured the patient.

Again, I saw a case of long standing sciatica due to internal hemorrhoids, and after these hemorrhoids were removed the patient recovered. Rest is one of the most important remedies. In these cases order the patient to bed and make him obey orders. Use splints and bandages to immobilize limb and nerve. One of the best local remedies I have ever used is the injection of five to fifteen minims of sulphuric ether in chronic, acute and sub-acute cases. I have cured these cases with static electricity, in some of them using the spray, in some the breeze, and again the spark. In other instances you will find the limb has perished an inch and a half in its circular diameter. With massage, hot water, and cold water treatments, and electricity, local and general, you will cure the patient, but you must study each individual case and see whether it is a symptom or disease per se, and act accordingly to each individual case.

I saw a woman a few weeks ago in Danville and they said she was paralyzed. She did have impaired use of her arm, a ulner and radial nerve neuritis. She had been long a rheumatic sufferer She was given anti-rheumatic treatment, a liniment to apply, massage, and told to use hydrotherapy freely. This was done and in three weeks she was well after holding the limb in a certain position for years. Find out the cause and remove it. The cause may be gone when you see your patient, but the effect is there, and cure the patient. You must try to go to the bottom of these cases and not treat them superficially or empirically as so many do and make an apothecary shop out of their stomachs, or morphine or whisky habitues.

H. H. Stallard, Pikeville: I understand you to say that you put the patient to bed in the majority of cases or advise it.

J. G. Carpenter: Some patients are so bullheaded that they do not want to go to bed. You should be man enough to put them to bed and tell them to stay there or you will use your Winchester on them. (Laughter.) The doctor must be the man behind the gun.

H. H. Stallard: In case a patient is in bed

with the knee drawn up and the patient cannot move the leg without great suffering, what would you do?

J. G. Carpenter: In an exceptional case I would give hypodermic injections of morphin and atropin. To others I might give sulphuric ether, and to still others psychological and suggestive therapeutics. Naturally, I would try to straighten the limb gradually, and would bring it down until I brought it down to perfection. would not exert so much strength as to break the bone, tear a nerve or muscle.

C. L. Sherman, Milwood: The essayist sounded a note of warning with regard to the use of alcoholic injections. I would like him to explain the dangers in the use of it.

S. F. Richardson, Munfordsville: In severe cases of sciatica or neuritis, where I have tried various methods of electricity and vaccines, atropin sulphate given in toxic doses of one-hundredth or the seventy-fifth of a grain will give considerable reaction, but I instruct the patient that if the reaction is too great I will counteract it When I get considerable toxic effects I give a dose every other day or the third or fourth day, depending upon the case.

H. H. Stallard, Pikeville: I believe there are quite a number of cases of sciatica that are difficult to treat most, or at least a part, of them, go the rounds and are dismissed without much relief. When you have one of these cases lying in bed his knee drawn up or flexed and severe pain on moving, take three drops of croton oil, make into nine pills, give one every two hours. Have him take what is left next day. Repeat this treatment every fourth day for eight to twelve days. I have known from six to eight of the worst character of cases yield to this treatment. Keep him on a good tonic as long as necessary. Don't use opiates.

C. W. Kavanaugh: Is it not the exercise he gets after taking this that affects the cure.

H. H. Stallard: I do not know.

F. W. Tyree, Hitchens: I have never attended many association meetings because I did not have the time. Sometimes, when the subject of pain is brought up for discussion, it is difficult for me to keep still. A patient with neuralgia, which we all know may appear in any part of the body, sometimes calls for a doctor quickly who will give some relief.

Whenever I have been called to see one of these cases, if I did not give some relief, they would send for another physician.

The question of pain is one of great importance, and we must look for the cause.

I remember attending a meeting of the C. & O. Surgical Society a few years ago, where a case of obstinate pain in the back was reported by a surgeon from the Huntington Hospital, but he did not know the cause of the pain. The case caused quite a free discussion. The subject of disease of the rectum was brought up as having a possible bearing on the case. I saw the case afterwards and was fortunate enough to follow it up and they found a slipped joint.

As to tic douloureux or neuralgia of the trigeminal nerves, I have seen two cases, one at the hospital. This case was operated on. It was a case they had under treatment for several weeks giving but little relief. Finally, removal of the Gasserian ganglion afforded relief. The point I wish to make is this: I have tried deep injections into the nerves of different fluids recommended, and everything else but cutting down upon the nerve, and the only success I have had has been from the use of one-quarter grain of morhpine sulphate administered hypodermically.

E. A. Stevens, Mayfield, (closing): The first speaker I want to answer is the one who suggested the use of morphin. That is the very thing you want to avoid. Of all dangers, it is the danger of the morphin habit in cases of chronic nerve troubles. Why? Because nearly every one of these patients is of that type. It is so dangerous that one dose of morphine is liable to make a morphinist in spite of all you can do, and they are the hardest people in the world to cure. Do not give them morphin.

I don't think Dr. Carpenter heard the beginning of my paper. I said in part, remove all the causes possible, but in spite of that fact there are a few patients who do not get well when the cause has been removed. In a few others, with all the skill you may possess you cannot find the cause.

Let me answer the doctor's question about the injection of alcohol. There travels along a mixed nerve like the sciatic two currents, the afferent along the nerves of sensation which is a weak current, and the efferent along the motor fibres which is a stronger current. The effect of alcohol when injected into a nerve is to paralyze it to a certain extent, and if a mixed nerve is so injected it would paralyze the sensory fibres before it would the motor fibres. If you paralyze a sensory nerve, you only get loss of pain and numbness in the part supplied by that nerve, but if you paralyze the motor part of the sciatic nerve you get motor paralysis of the limb. It was the slight weakness in the leg after an injection into the sciatic nerve that caused me to discontinue its use. A paralyzed leg would be a good opportunity for a suit for mal-practice.

When I spoke of sciatica I did not refer in any way to subluxation or hip-point disease, or any sort of tubercular bone disease, but I was speaking of sciatica. I know there are cases in which it is difficult, if not impossible to find the cause, and it is then as near an entity in itself as possible. It is expected of you to get rid of piles

and to get rid of uterine trouble if it is present and get rid of diseased tonsils, but when you have a condition the cause of which you cannot find, or if you find the cause and remove it and the condition still remains, what are you going to do? I have tried practically everything mentioned. I have used atropin and alcohol. I have resorted to these trigeminal injections and they have brought me more cases on account of the relief which follows, and I want to say to you, it is the easiest and quickest and least dangerous of the methods I know anything about or have had recommended to me.

HYPERTHYROIDISM — A CLINICAL STUDY.*

By W. F. Boggess, Louisville.

The purpose of this paper is to discuss in a clinical way some of the useful manifestations of excessive thyroid secretion, both temporary and chronic,—from the internist's viewpoint, calling attention to the frequency of this condition unassociated with exophthalmic goitre, and to emphasize the fact that many cases of true exophthalmic goitre have a medical side, and can be relieved and cured without surgery.

I know of no condition giving such serious and positive symptoms to the patient in which the average internist feels as helpless and uses as little therapeutic acumen and rational handling as these cases.

We have many cases of atypical types of exophthalmic goitre where the patient shows fewer of the graver symptoms and complications, and in which the patient bears the toxemia fairly well, showing less of the asthenic state characteristic of the graver disease.

Close watching and careful analysis of a large number of persistent tachycardias, without any perceptable increase in the size of the thyroid gland, but with persistent disturbances of metabolism, loss of strength, increased nervousness, will unearth a large number of unsuspected atypical hyperthyroids with the cardio-vascular symptoms remaining in the ascendency.

While it is true that many of the atypical exophthalmic cases may merge into the typical complex, yet many of them do not,—but occur and recur in exacerbations, the tachycardia showing in paroxysms as a result of hypersecretion from some neuropathic shocks and tendencies, from some focal infection, or from disturbances of some of the other glands and organs of internal secretion in which the hormone equilibrium is disturbed.

It is also a fairly well demonstrated fact that the surgical treatment of these cases of atypical thyroidism does not entirely and permanently relieve the leading subjective complaints.

There is no difficulty in making a clinical picture, and understanding the clinical phenomenon of typical exophthalmic goitre for the complex of the four cardinal leading symptoms, tachycardia, goitre, prominent eyes and tremor are so characteristic as to make positive diagnosis without difficulty.

Our increased knowledge of the physiological effects of thyroid administration and anomalous thyroid function have made recognition fairly easy, and thus has greatly increased the number of recorded cases of atypical exophthalmic goitre, as well as, proving its increased frequency, for tachycardia persisting without goitre, but with the neuropathic habit, may justify, and does justify the strong suspicion of perverted thyroid function.

Tachycardia with symptoms referable to the sympathetic system, including excessive sweats, and moist skin, with certain characteristic ocular manifestations, whether the Graefe, Stellwag, or Moebius symptoms, usually the first of these give you a positive picture.

The diagnosis may be fairly well established, with the presence of tachycardia, and one or two ocular symptoms. The symptoms of hyperthyroidism, outside of that of the struma or enlarged goitre itself are embraced in the following symptomology:

1. Those referable to the eye signs, other than protrusion of the eye ball, namely, the widened lid slits, particularly disassociation of movement of the eye ball and of the upper eye lid. (Graefe sign). Insufficiency of convergence (Moebeus sign). Infrequency and incompleteness of involuntary winking (Stellwag's sign).

2. Cardio-vascular symptoms. A persistent tachycardia is often the first symptom to call the attention of the physician to thyroid poisoning, together with palpitation, and the other vascular signs of accidental murmurs, irregular pulse, ordinarily blood pressure low, although in the typical Graves' syndrone, you may have arterial hypertension. The heart muscles suffer from prolonged thyroid intoxication.

3. Cutaneous symptoms. In hyperthyroidism the skin is usually thin, delicate, soft, and moist. Profuse sweating is common, and a troublesome symptom. In these milder cases excessive secretion of sweat, with mottled skin is a fairly constant symptom.

4. There is no question of a close rela

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tionship of the thyroid with female genitalia, as seen in the great frequency of the swelling of the thyroid at puberty and pregnancy. In hyperthyroidism, either mild or severe, menstrual disturbances are frequent. The relationship of the internal secretion of the ovaries with that of the thyroid, and vice versa, is fairly well demonstrated, and while the clinical significance of the correlation of the other endocrine glands with the thyroid has not been put on a well-defined and positive basis, yet the connection between these has gone beyond the point of speculative interest.

5. Disturbance of Metabolism. In every case of hyperthyroidism there is more or less disturbance of metabolism, particularly that the total combustion in these cases is very much greater than in health. "The fires of the body are fanned into an intense flame," and these cases, owing to the acceleration of the exudative processes may overtax the mechanism of heat production and elimination, and that accounts for the fact that in these atypical cases with their rapid pulse and loss of strength and cardio-vascular symptoms, you practically always have elevation of temperature that misleads you and makes you feel that you have some infection of the heart itself. I have seen a number of these cases treated as endo-carditis, and myocarditis, where the trouble was simply the toxic effect on the heart muscle, and the disturbance of metabolism, caused by the thyroid hypersecretion.

Not only is the oxidative process accelerated but also the protein metabolism, and the nitrogen equilibrium is maintained only with difficulty. The carbohydrate metabolism may also show abnormalities, and it is not uncommon to find alimentary glycosuria occurring and disappearing when hyperthyroidization is relieved. There is also some disturbance of the mineral metabolism in thyroid intoxication, particularly loss of phosphorus and calcium through the intestines and the feces. Nervous and mental symptoms are very common in this syndrome:—indeed in many neurasthenic states and in many mild mental disturbances the physician should always think of the possibility of thyro-intoxication as a factor. These patients frequently have anxieties, apprehensions, phobias and obsessions, as well as insomnia.

A few words as to the etiology of this condition. In this we are dealing somewhat in a speculative field. No single cause can always be demonstrable. Any change in the body that causes irritation in some domain of the vegetative nervous system, particularly the focal infections, such as the sinus, tonsilar, pulmonary, digestive tract infections, are unquestionably frequent causes of thyro-toxine outbursts.

Lately there has been a good deal written on the possibility of most of our cases of thyro-toxemias being due to some, or many specific infections. Particularly is that so in the light of Rosenow's Bacteriological Studies of the thyroid glands.

In 25 out of 32 glands operated upon at the Mayo Clinic he identified an "anaerobic gram positive diplobacillus-like organism" and from the blood on two occasions in a severe case of exophthalmic goitre and in conjunction with Dr. Moon in eight of twelve dogs having goitre." Althought this organism was not found invariably by Rosenow, and though this germ may not be the etiological factor in all cases of hyperthyroidism, still there is a growing tendency among clinicians, bacteriologists and authors to attribute "thyro-toxicosis" to use Plummer's term, to infection. Finally the association of chronic tonsilitis or of a focal mouth infection with goitre renders endocarditis a very possible accompaniment of exophthalmic goitre.

In the past two years in a clinical way I have been observing the relationship between chronically infected tonsils, and enlargement of the thyroid gland with thyro-toxicosis. In the past year I have had three cases of well-defined Graves Disease in women between 20 and 30 years of age, with bad tonsils, where the tonsils have been removed the condition entirely recovered, and the patients have shown no further evidence of any thyroid intoxication.

In many other atypical cases I have found by cleaning the crypts of the tonsils out, and by releaving the infection of the tonsils and post-nasal spaces, the cases have responded to treatment and improved in health, and the cardio-vascular symptoms abated or ameliorated.

I am very much of the opinion that we will find along the infections theory of the majority of our thyroid cases explanations and possibilities of cure heretofore unthought of. While the old etiological factors of fright, extreme emotional excitement or physical trauma, and iodine therapy and iodine retention may suddenly precipitate the syndrome, yet they in themselves should not be considered causative factors of the disease.

I am of the opinion that this field of focal infection, while considered by some physicians, and possibly is, being over-worked. I think it is a field that is not to be under estimated as a causative factor, and as a cure, particularly since the bacteriological studies of Rosenow and others, and if this paper does not do anything else than call attention to the

association of chronic tonsillar infections and thyro-toxicosis, it will not be in vain.

The treatment of the thyro-toxicosis is not the treatment of the heart or any one distressing symptom, but the treatment of the condition in its entirety. Find the focal infection, if it exists—whether tonsillitis or sinusitis or infected teeth, etc., and remove the source of the infection and disturbances. Treat the patient very much as you are want to treat an active tuberculous state. Rest in bed, sunlight, fresh air, absolute physical and mental, and nervous rest. Forced feeding, with an eye to those positive metabolic activities that exist in these cases. The chemistry of the body's metabolism in these cases is in precarious condition, owing to the rapid oxidation, and rapid elimination of the phosphorous and calcium content of the body. The alkaline reserve is much impaired, and these patients are easily thrown into serious acidosis. The alkaline balance needs time for readjustment, as the physiology of the fixed cells can not be rapidly readjusted, and consequently the administration of alkalies under such circumstances is sometimes disappointing because the cells cannot utilize it properly. The rest in bed is one of the most important factors to be insisted upon. For in no other way can you so well lessen the total combustion which even in the resting state is 50 to 70 per cent. greater than normal. For a patient with thyro-toxicosis may, at rest, use as much oxygen in his combustion, as a normal man at hard labor.

The administration of iron and arsenic, preferably hypodermatically, is of very great value in these cases. I have been impressed with the idea that large doses of arsenic, hypodermatically, is a remedy of great value in these cases. My rule is to give three grains of Sodium Cacodylate every second or third day, for quite a period. I am of the opinion that in addition to the arsenic and iron, five grain doses of hydrobromate of quinine, and possibly the addition of ergot in one grain doses, three to four times per day, gives you in many cases, rather positive results. This treatment can be kept up for quite a while. Owing to the rapid elimination of the alkalies I, of late years, give these patients lactate of strontium, two or three times a day in rather full doses. I think that the strontium salts play a part in the metabolism that the calcium salts do not play, and that they conserve the calcium retention. The symptom that concerns both the patient, as well as the physician most, is rapid heart, and the patient's consciousness of heart beats (palpitation). Theoretically, digitalis would be the drug to use, and yet it is most frequently disappointing. In fact in some cases digitalis seems to aggravate the patient's sense of palpitation and pounding. Strophanthus is a drug that seems to act better in the majority of cases than digitalis. I sometimes combine the strophanthus and digitalis.

Babcock suggests that in those cases where digitalis and strophanthus does not relieve the patient's discomfort from palpitation, then tincture of aconite given in full doses,—twenty to thirty mm.—three times a day may do them good in lessening the tachycardia and uncomfortable sense of pounding. The ice bag over the heart will often-times give them relief and do good. Organo-therapy has been tried with varying results.

While some cures have been reported from the administration of thyroid extract, its use is altogether contrary to our accepted opinion as to the cause of the disease. If any result is obtained from the administration it is due to some favorable action in stimulating the antagonistic glands, or in producing antibodies. The possibilities of danger are in my mind, greater than those of good. The administration of adrenalin and pituitary extract in some cases seem to do some good. Pituitary extract, particularly, is worth trying. Hydro-therapy, electro-therapy, and massage are all indicated. Insomnia can be controlled by the administration of large doses of strontium bromide in conjunction with small doses of veronal or like drugs.

In conclusion I will say that a study of these cases in a clinical way, and a thorough diagnosis and understanding of these atypical cases, the results of medical treatment are very favorable, and I do not think I am exaggerating when I say that from 70 to 90 per cent. of them can be relieved and cured. While emphasizing the possibilities of medical treatment and handling in the earlier stages of Graves disease, and in all of these atypical cases I do not desire to minimize in the slightest, the wonderful results of surgery, and the necessity of surgery in many of your cases of exophthalmic goitre, but I do want to emphasize the fact that these cases should be recognized early, and proper treatment should be instituted, and the patients prevented from coming to the surgical stage. Do not postpone the surgical side until the general musculature, as well as the cardiac muscle has been degenerated to such a point that even surgery fails.

DISCUSSION:

B. J. O'Connor, Louisville: I cannot very well refrain from saying a few words on this excellent paper by my old preceptor and friend because there are one or two little points that are of sufficient importance to call attention to. In the first place, the question as to whether hyper

thyroidism is a symptom or a disease. Practically, I regard hyperthyroidism as a symptom of trouble rather than a disease just as I do indigestion as a symptom rather than a disease. In other words, in the vast majority of cases hyperthyroidism is due to some other cause, it is due to some other disease, and in the treatment it is is very essential to seek out the cause and give causative treatment rather than symptomatic treatment.

THE PAST, PRESENT AND FUTURE OF LEGAL DEFENSE WORK IN KENTUCKY.*

Hon. Fred Forcht, Louisville.

When your association honored me by asking for an address on the past, present and future of legal defense work I felt, like the man who had asserted he could lick anybody in the world, that perhaps I had contracted to cover a little too much territory. However, I shall do my best because I have always felt that there was a bond of kinship between the lawyer and the physician. Far be it from me to refer to the fact that both to a certain degree profit by the misfortunes of others, but rather let us say that both make their living by bringing the misfortunes of others to a happy termination. What I did have in mind was the fact that you never see a doctor at a funeral while lawyers are known to give away their tickets to executions. This disposition on the part of both professions to avoid watching the bitter end of client and patient demonstrates a certain kinship which strengthens the bonds of fellowship between the profession.

Seriously speaking, I shall separate my address into the three divisions into which the subject naturally resolves itself: First,

THE PAST

In the early beginning of history, back in those dim days when leech and doctor held sway over the physical welfare of the community law and medicine had little in common. Indeed, so far as we can ascertain the two did not meet until the reign of Henry VIII, that monarch who has so lavishly contributed to both professions, having made divorce suits possible for the lawyers of posterity while he was celebrated along surgical lines because of his skillful amputation of the heads of several queens of the realm. It was in this period that a law was passed prohibiting from the practice of medicine any doctor who did not first pass an examination conducted by the bishop of the diocese together with four doctors in physics and surgery.

On the other hand, since the very beginning of our country, the legislatures of the several states have been excessively prolific in the passage of laws pertaining to the rights, duties and liabilities of those who would practice medicine. The past in medico-legal defense has seen fewer cases than the present. The number of suits against physicians has increased in almost direct ratio to the advance of surgery and medical science. A few decades ago the use of the prescription pad and the knife was far more stable and vastly less experimental than is the case to-day. The rise of the X-ray, microscopy, serums and mechanical and electrical devices has been responsible for a tremendous increase in malpractice suits. In another portion of this paper I shall endeavor to tell you why this is so.

It would seem that the rigid examinations and the barb wire qualifications and restrictions now heaped upon the over-burdened shoulders of those who take the oath of Hippocrates would tend to make malpractice less frequent than in the past when the degree of M. D. was attained with greater ease, but we must remember that malpractice suits do not always indicate malpractice. Indeed, a glance at the records in the courts of Kentucky will demonstrate the significant fact that defendants in cases of this character have almost universally been high class physicians who were charged not with lack of skill but with lack of care. Perhaps I can explain this more adequately by passing to

THE PRESENT

As I stated a few months ago, the number of suits and claims filed against the medical profession has become alarmingly large and has now attained an important place in the records of our courts. I have already stated one reason for this. Another cause which I outlined to this body three years ago, is the petty jealousy which exists among the medical profession itself, and not only causes "minor league" doctors to "knock" the more successful physicians in the same community, but is also brought about by the efforts of unethical physicians to poach upon the preserves of their colleagues and steal patients by minimizing and insinuating against the ability of fellow physicians.

In "The Law of its Relations to Physicians" a well-known authority on medical jurisprudence, it is stated;

"It is a frequent occurrence that patients change their physicians; also, that the second physician called disapproves the treatment of his predecessor, and changes it, perhaps

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properly, and the patient dies. In such a case, if it should appear that the practice of the physician first called was incorrect, there is always room to conjecture that had the patient been properly treated in the first instance he would not have died."

I, myself, tried a case where it was claimed that a broken limb had not been properly set. The work had been done by a surgeon of eighteen years' experience who handled an average of fifty similar cases a year. The doctor testifying for the plaintiff, while admitting that he had not set over three limbs during six years of practice, testified that in his opinion the limb was not properly set. It developed during the testimony that the patient called to see this doctor who had been practicing only six years and asked him to look at his limb, and immediately upon examination of the limb this doctor asked the patient who has set his limb at the time it was broken, and after having been given the name of the surgeon, remarked: "I thought so." The suit for malpractice followed.

It is unfortunate that this condition exists and it is to be hoped that it will be discontinued, but meanwhile we must take for granted the fact that there are crooks in every line and guard against the insidious work of that professional cannibal who seeks his own success at the expense of his brothers in arms.

One of the more or less recent developments in the practice of medicine which has given rise to serious questions regarding malpractice is the use of the X-ray. Many physicians and surgeons have asked me whether or not a doctor renders himself civilly liable when he fails to diagnose a case properly and has not made use of the X-ray. To hold a physician for failure to use an X-ray in cases where he is called upon to treat a broken limb would place the medical profession between the horns of a serious dilemma, for if the doctor does not use the X-ray he would be brought into court for his failure to do so, while the use of the apparatus may likewise bring him before a jury in the events of burns or the other injuries which occasionally follow the taking of the pictures.

In this instance he is in the position of the Russian Jew who was ordered by a Bolsheviki officer to leave town in twenty-four hours. "But" said the unfortunate fellow: "I cannot dispose of the business and settle my affairs in that short a time." "Then you will be shot," was the reply. Naturally our friend did not desire to be shot so he stated he would give up his business and sacrifice his property and leave immediately. "Wait," said the officer, "have you got a passport?" It appeared there was no passport. "Then you can't leave town," said the officer, "as any person who attempts to leave without a passport will be executed at once."

There do not seem to be any cases in Kentucky which definitely settle this point, but in a Washington case the court has held that a surgeon is not negligent in failing to take an X-ray photograph to ascertain whether or not there is a fracture where he diagnoses and treats the injury as a sprain. In that case the court says:

"A physician * * * * is not liable for mistakes if he uses the method recognized and approved by those reasonably skilled in the profession."

The matter clearly resolves itself into whether or not the doctor in charge of the case properly diagnosed it. In order to prove negligence it must be clearly shown not that the physician lacked ordinary skill but that he failed to exercise ordinary care, or to make use of his skill and ability in determining the nature of the injury. In an Illinois case where an extremely fat man complained of pain and swelling at a certain point and his doctor diagnosed the injury as a rupture, it was later discovered that the patient had not suffered from a rupture and there were indications that the truss caused an abscess which subsequently developed. The evidence was held insufficient to warrant a verdict against the defendant as the court said:

"Proof that he was mistaken as to the existence of a rupture, or that the abscess was caused by the pressure of the truss, was not enough to entitled plaintiff to a verdict."

New York courts have held that where a physician gives a patient careful attention and calls in another physician to confirm what turns out to be an erroneous diagnosis it does not follow that he was negligent, while in the case of "Stamper vs. Rhindress, 41 N. S. 55," it is held that where the diagnosis of a fracture is a matter of extreme skill and a surgeon uses ordinary skill and diligence in his examination, negligence may not be imputed to him for failure to detect the fracture. On the other hand a physician is answerable for damages in Kansas for failing to discover a dislocation of the shoulder where he had a reasonable opportunity to make an examination and the dislocation could have been ascertained by the use of ordinary care, while a New York case has held a physician to be guilty of negligence where he omitted to reduce a swelling, thus failing to discover that an injury was a broken patella instead of a rupture of the ligaments. Naturally the question presents itself: "What is ordinary care"

and in this connection it may be stated that ordinary care is that degree of care exercised under like or similar circumstances by a physician of similar qualifications, practicing in the same locality. The question, however, is peculiarly one of fact and can be determined only by considering all the attending circumstances in the case. It would seem in this democratic country that no man is obliged to carry on or continue any work which is distasteful or unprofitable to him, yet many doctors have learned to their sorrow that such is not the case. For once a physician has undertaken to treat a patient he is bound to carry through. The "Labor" case offers the clearest example of the duty of the doctor to continue his treatments after accepting the case. In Hovel vs. Moffett, decided in Mississippi in October, 1915, a doctor refused to attend one labor case which he had agreed to handle because at the time he was busy with another. The court held that where a person assumes obligations to different parties, the performance of which may become incompatible with each other, both parties being entitled in equal right, it is not an excuse for a default to one party that both obligations could not be performed. It was further held to have been the duty of the doctor either to procure another doctor satisfactory to the patient or to have gone himself. It must be borne in mind, however, that suits of this character are not malpractice cases but actions for breach of contract which at least saves the physician from paying punitive damages.

On the other hand there is no duty on the part of a doctor to undertake a case when it is first offered to him. Mr. Wharton, a well-known authority on the law of negligence says:

"No question can exist as to the legal right of a physician, unless he be an officer of the government charged with specific duties, which he thereby violates, to decline to take charge of a particular case."

I need not speak to you at length upon the general duties of a physician. As I have just stated, his engagement is to attend the sick as long a she requires attention unless he is dismissed or, with good cause, withdraws from the case, and he is bound to use reasonable care and skill in determining when his attendance should cease. Of course a physician practicing in an isolated locality or where his practice is limited and his opportunity to broaden the scope of his experience and skill restricted by environment and circumstances, he is not bound to possess that degree of ability and knowledge possessed by surgeons and practitioners of large cities or hospitals. Indeed the more advanced physician who takes advantage of all that is new and progressive in the profession finds himself in a rather perilous position, as he is held legally liable for any work on his part which is in the nature of an experiment. In an English case where a doctor disunited the callus of a bone which had been previously set, the court said that many men very skillful in their profession have frequently acted out of the common way for the sake of trying experiments; and the court further says that it appears from the evidence that it was improper to disunite the callus without consent. Thus it was ignorance and unskillfulness to do contrary to the rule of the profession what no surgeon ought to have done. It appears that this was the first experiment made with a new instrument which the doctor used, and it was a rash action, and he who acts rashly acts ignorantly, and although the physicians in general may be as skillful in their respective professions, yet the court cannot help saying that in this particular case they have acted ignorantly and unskillfully contrary to the known rule and usage of surgeons.

The use of vaccines and serum treatments has had a wonderful influence on the decreased mortality in this State, yet until these treatments become established practically, the physician who uses them risks a malpractice suit for the sake of his patient's well being. The test seems to be whether or not the new treatment has been sufficiently tried out to establish its safety and stability, yet in a Michigan case tried in 1914, in dismissing the case against a surgeon who had been sued for using "The Murphy Treatment" the court held that where a surgeon tried a remedy which appeared to have been known and approved by his profession, though not perhaps generally, and where this treatment was used as a last resort in order to overcome a condition which was bound to result otherwise, the failure of the treatment and the occurrence of the condition which the serum was used to prevent does not render the physician liable to his patient.

In this day and age the law has taken from the individual many causes of action which have existed in the past. Workmen's Compensation laws have reduced the number of damage suits by half and there are scores of similar instances. I am sorry to say that in the legal profession as well as others, there will be found the unethical practitioner, and this class of attorney is to-day far more likely to participate in a malpractice suit than he was in the past when lax laws gave him a greater opportunity to practice in the courts.

THE FUTURE.

Naturally it is impossible to cite cases on the duties and liabilities of physicians which

will arise in the days to come. We do not know what new conditions will exist nor can we say what new discoveries in the vast and ever growing field of medicine will become a part and parcel of the doctor's daily life or what affect these will have upon the legal side of medicine. The war has developed such phenominal innovations in surgery and medical science that one "knoweth not what a day will bring forth." The Dakin-Carroll treatment alone opens up a wide and fertile avenue to malpractice suits and the scores of other inventions and discoveries are certain to lead the wide-awake and progressive surgeon into many a pitfall and snare. No man labors under a greater responsibility than the doctor. No man works harder, accomplishes greater good with prospects of less gratitude. He must toil and he must study arduously and unceasingly. He must sacrifice every comfort and every pleasure for the good of his fellow man. He must expose himself to contagious disease; he must risk his own life; he must leave his fire-side and his bed to spend the long night in vigil by the patient's couch and fan again into flame the tiny spark of life ebbing away under the icy fingers of death. And yet, all the while and even when he is taking into his own heart the sorrow and the suffering and the agony of others, he knows that the slightest error of judgment on his part may drag him into the spotlight of a court room at the expense of his time, his work, and what is dearer than all else—his reputation.

A vast number of your profession is today doing its part in this titanic struggle where America's sons are placing their lives upon the altar of liberty in order to make this world safe for democracy, and I know I express the hope of all who are present that these doctors upon the field of battle and in the hell-torn trenches will learn to carry that spirit of brotherhood for which they are risking and sacrificing so much, back to the United States so that when they resume their peaceful medical duties they will realize that the brotherhood of man and the golden rule exists in their own profession. Then and then only, will they by their example and by their practice teach the entire profession that every doctor must honor and support in loyalty and brotherhood the members of his profession, and thus, with the elimination of petty jealousy, back-biting and calamity, malpractice suits will be materially diminished in this commonwealth.

I desire to take this opportunity to state to the members of the Kentucky State Medical Association that a debt of gratitude is due to Dr. J. N. McCormack, Dr. W. B. McClure and Dr. John J. Moren who constitute the medico-legal committee and who have worked and do work with untiring energy in assisting those members who have been so unfortunate as to have been called upon to defend themselves in malpractice suits. The success which the lawyers, including myself as your general counsel, have attained in the courts of the State in winning malpractice suits would not have been accomplished had it not been for the valuable assistance which has been given by the gentlemen just named.

DISCUSSION:

W. B. McClure, Lexington: I confess, as a member of the Medico-Legal Committee, when I realized that our beloved Moren would not be with us to make his usual exhaustive report on this occasion, I was somewhat disturbed. I wrote Dr. J. N. McCormack, acting member in the absence of his son, if he would not make the report. I was delighted to learn that he had secured the services of our attorney to make this report, and I am not disloyal to Dr. Moren when I say we have lost nothing by his absence. I would suggest, if Mr. Forcht is not going to leave, it would be wise and helpful if the members be permitted to ask individual questions which I know are in the minds of many of you interested in this matter, and he may be able to elucidate any point concerning which you are not clear; but before that, I want to move that this association by a rising vote extend their hearty thanks to Mr. Forcht for this lucid and valuable paper he has presented to us to-day.

Seconded and carried unanimously.

Mr. Fred Forcht, Louisville: I certainly appreciate the honor which you have bestowed upon me, and I want to say we have only eleven malpractice suits now pending in the State. We lost one suit in the last two years, and that suit was the result of a bitter quarrel which existed between two doctors in the western part of the State. These doctors were jealous because one was encroaching upon the other's preserves and stealing his patients; and they were laying for each other. With the exception of that one suit which we lost in the last two years, we have had a wonderful success, due to the fact that when we had malpractice suits, no matter in what community they existed, the doctors got together and stuck to their fellow practitioner who was in trouble. Unless you do that, I don't care how prominent you are; I don't care how influential you are; I don't care how much money you have and how many relatives you have in the community, you can't tell who is going to be the next victim. The only way to prevent that, as I see it, is this: when a malpractice suit is filed in your county, the county-society should get together, look into it, stick to the doctor who has been sued and help the lawyer who is to try the case in every way possible.

I will be glad to answer any questions you may desire to ask me about malpractice suits or about any threatened malpractice claims.

W. B. McClure, Lexington: If no one else is inclined to ask any questions, I would like you to make clear one question. I have a good deal of trouble, as a member of the Medico-Legal Committee, in this way: A man writes to me and says that he is threatened with a malpractice suit and wants to employ at once lawyer Jones in his community as his attorney to defend him. In these instances I refer them to our attorney for advice as to whom they shall employ, as I believe our attorney is sufficiently familiar with the attorneys throughout the State to know who would be the best person under certain conditions to employ in that case. Frequently I find that the defendant has possibly a relative in the community who is a lawyer of standing to whom he wants to give this fee paid by the association. I would like Mr. Forcht to make that point clear to the members of the association.

Fred Forcht: We have built up an association which extends over a large territory, and there is not a county or district in the entire State of Kentucky where the Medical Defense Committee has not one or more competent lawyers skilled in the defense of damage suits. To make that clear, I should say that there are divisions or specialties in the legal profession just as there are in the medical profession. Some of you surgeons do not do anything else but practice surgery. You would not treat a case of typhoid fever. So it is with lawyers. There are certain lawyers who draw deeds and write wills but never go into court. While they know the rudimentary principles about damage suit law, they do not know the first principles, so to speak, of trying damage suits. On the other hand, there are what we term jury lawyers, who may not know how to try a divorce suit. Therefore, we have to pick out lawyers all over the State in the various districts, skilled in the defense of damage suits. Because the one dollar and a half which goes to the Medico-Legal Committee is paid by you, you must not think we are rolling in wealth. We are not. We have examples of lawyers who charge $750.00 whenever they go into court for one day. If we paid out money at that rate you would have to go down into your pockets and increase the dues. If you are threatened with a malpractice claim or a suit has been filed, write to Dr. McClure, to Dr. McCormack, or myself. We will pick out a lawyer for you, or we will tell you who the lawyer is in advance, because sometimes we find a doctor who says, "I don't want that fellow to defend me; he and I do not speak." We will protect you on that; we will tell you in advance who the lawyer is. If he is not satisfactory, we will get a lawyer who is satisfactory. You must leave the question to the general counsel of the Medico-Legal Committee, so that we can get a competent lawyer for you to do it for $150.00 or less, instead of $750.00 a day.

Where a doctor hears in the community that a claim is to be made against him, he should not wait for months, as is so frequently done, but should report that fact immediately. If you report immediately that you have been threatened with a malpractice suit, we can notify your county society, we can get busy on the case, get testimony, and not wait for six months or a year before doing anything.

C. W. Kavanaugh, Lawrenceburg: I do not know whether what I am going to say is strictly germane to this paper or not. It occurs to me, that a suit for damages against a physician who is responsible for a malpractice case ought to be instituted in every case by the individual that is damaged. If that were done, we would not have so many of them, because undoubtedly it does do a great injury and a great damage to the person who is sued in the majority of cases, and most of these suits have nothing to stand upon. Furthermore, I believe the medical profession would be justifiable and sustained by law in taking away from that physician who originates these suits of malpractice, his license to practice medicine. He ought not to be allowed to stay amongst us. He is not of us. We certainly have the power and we ought to exercise it in removing such a man from the profession.

W. W. Anderson, Newport: There are two points I would like to emphasize in connection with this paper and discussion, having had some experience along this line of work and having learned from the experience of others.

I had the honor to be a member of the original Committee on Medical Defense of this association. The first point is: When Dr. A. is sued for malpractice it will not do to say that Dr. A. undoubtedly is a shyster; anyway he is in bad, let him go, he deserves it. A decision in his case will stand as a precedent that will be brought up in your case, and hence he must be defended in so far as his case is defensible. Of course, if a man has clearly gone wrong and is clearly guilty of malpractice, that man will not be defended but advised and helped to compromise the suit. But no matter how bad a man he is, when he is not clearly wrong, he must be defended lest his case becomes a precedent to stand against suits in the future.

The other point is to let the physician who is unfortunate enough to be sued prepare his case thoroughly and early, and it takes more than a good lawyer to do that. He should have the advice of the best talent in the medical profession in his locality and outside his locality, if necessary. He should have his case looked into from every possible angle of attack. It should be clear in his mind just what he will have to defend, and he should have the medical talent

ready to help him in his defense. If that is done there is scarcely a possibility of his losing. We have found such preparation a valuable aid in our community where I served as medical referee and on the active corps of the medical defense. The only case lost in our community several years ago was through failure of the physician to prepare his case. He did not prepare it. When he got on the witness stand he did not know what he was talking about himself and lost his case. If we will watch these cases, take care of the man when he has a defensible case, and prepare the case properly before he gets into court, we will be much more successful in defending malpractice suits.

J. N. McCormack, Bowling Green: Following what Dr. Anderson says about the importance of some definite rule in regard to what members should be defended, in drafting a plan for the House of Delegates, I prepared the Constitution and By-Laws for the county societies, and in adopting a plan we advised that whenever a man was threatened with a malpractice suit or a suit was brought against him, the county society should appoint a committee of three or five of its best members to investigate the case and report back to the society whether the facts justified the suit, or whether or not the member should be defended. That is a matter of the utmost importance and is neglected by the majority of county medical societies. As a member of the committee and acting secretary, whenever a man says he is likely to have a malpractice suit brought against him or one has been brought against him, I advise that the society appoint such a committee to make an investigation and report to the county society whether or not the man ought to be defended There are obvious reasons for this, and it is of the utmost importance that it should be done in every instance. There are suits brought that ought not to be defended.

We had from one county a suit brought where it was charged that the doctor was so intoxicated when he went to the house to attend an obstetric case that he lay across the foot of the bed in the way. A committee was appointed to make an investigation. This was done, and the committee reported that these facts were true as charged. I advised the committee to give the doctor the best advice they could to compromise that case on the best terms he could. Such a case ought not to be defended. It was a case that the profession did not want to go into court about, nor did he. One of the great advantages is that it robs the counsel for the plaintiff of the plea that he tried to defend any member no matter what he is charged with or for.

When a doctor is hauled into court, every doctor is ready to testify in his behalf, and I insist that this precaution be taken in every instance in justice to the profession and plaintiff, be he a man or woman and as a protection of every interest and the good name of the profession and of the people.

CARE OF DEFECTIVES.*

By Arch Dixon, Henderson.

The question of the care of Kentucky's mental defectives is a very complex one and its solution requires the earnest thought and united action of her people.

The care of the insane population of the State is not such a burning and urgent problem as that of the feeble-minded. Some one has said that "Society despises idiots and feebleminded people but were afraid of the insane," that reason insane people, who are not as great a menace to society as are the feeble-minded, are not permitted to roam at large; inquests are held to test their sanity or insanity and if found to be insane are at once committed to a State Hospital where they are properly cared for, and properly treated.

The most serious question before our people is the proper care and provision for these "Pawns of Fate," as the feeble-minded are called by Dr. Paul E. Bowers, and I shall confine my remarks more particularly to the care of this class of defectives.

The signing of the armistice bringing with it the dawn of peace, the consequent decrease in emergency war work, furnishes opportunities both for the Federated Clubs of the State and the Kentucky Council of Defense to become active workers in all plans which make for a betterment of Kentucky. With the aid of these two splendidly organized bodies and the influence which they and they alone can bring to bear upon the next General Assembly, there is hope of accomplishing legislation which will redound to the credit and uplift of the people at large and to the comfort and happiness of all their defectives.

In October, 1917, as a member of the State Board of Control I presented to the Medical profession of the State a statement of the then existing provisions for the mental defectives of the State as set forth in the report of Dr. Thos. H. Haines. This statement read before the Kentucky State Medical Association, was in the nature of a revelation to most of the medical men present, few of whom had paid any attention whatever to the subject. They did not know that two per cent of the inhabitants of the State were mental defectives either feeble-minded or psychopathic or both, "which group keeps the other ninety-eight

*Read before the Kentucky Council of Defense, Lexington, March 4, 1919.

per cent busy looking after it, for its numbers make up the bulk of our dependents and delinquents. Nature's step-children and prison fodder." Furthermore, the entire history of criminality, as far back as we can go, points unmistakably to but one conclusion and that is from time immemorial is that defectiveness and crime have been synonymous. There can be no doubt in the minds of those who have studied the subject that a large majority of youthful criminals not only in Kentucky, but in every other state and especially in every large city, are feeble-minded, morons or hyper-morons, or the victims of dementia praecox, all with criminal inclinations.

Mental defectiveness is hereditary and constitutional, and consequently not amenable to our preachings, asylums, reformatories, penitentiaries, etc. We must ever bear in mind that each year a new quota of defectives is born with statistical regularity. They pass through the hands of parents, then the pedagogues, the theologians, the physicians, the social workers, the employers, the courts, the prisons and back on society, each one in turn passing them on to the next, and no one willing to acknowledge their impotency in the face of mental defectiveness."

Dr. Haines set forth in his report that there were in Kentucky over three thousand feeble-minded persons who were costing the State a total sum of three hundred and twenty-one thousand dollars yearly; that many of these poor unfortunates were distributed in hospitals for the insane where they do not belong; that many were in alms houses where, in a majority of cases, they are not and cannot be adequately protected; that many were in institutions for children and in public schools; that a greater number than all the foregoing were at large in their communities free to propagate and perpetuate their kind.

It is an established fact that feeble-mindedness is inherited and to this fact is due at least two-thirds of our present feeble-minded population. It is a further fact that the feeble-minded mother is more prolific than the normal mother; that the feebleminded are perennial children, lacking in judgment and resistance to evil influences and are therefore unable to adjust themselves to normal life in the community. It is also a lamentable fact that the social evil is fed from the ranks of feeble-minded women. The public and private organizations dealing with pauperism, inebriety, family desertion and illegitimacy find this same element of feeblemindedness entering into and complicating their work in a larger degree perhaps than any other factor. In all our schools there are children that we call backward or retarded, that while much of this lagging behind is undoubtedly due to remedial causes, just as certainly a very considerable part of it is due to a mental deficit that is irremediable. We do not know how large this per cent is, but we do know that it is large enough to affect, and that it is affecting our whole educational system.

As a remedy for this I advocated the passage of a law permitting the sterilization of confirmed criminals, idiots and imbeciles, or in lieu of this, colony care and segregation under State control. Sterilization is incomparably the better and could such a law be enforced in the whole United States, less than four generations would eliminate nine-tenths of the crime, insanity and sickness of the present generation in our land. Asylums, prisons and hospitals would decrease and the problems of the unemployed, the indigent old and the hopelessly degenerate would cease to trouble civilization. The great horde of defectives, once in the world have the right to live and to enjoy as best they may whatever freedom compatible with the lives and freedom of the other members of society. They have not the right to produce and reproduce their kind for a too generous and too blindly "charitable" society to contend against. The greater crime consists in allowing the hereditary criminal to be born.

After all, to put the aspect of the matter upon a dollar basis and that is apparently the only relation that affects a good many people, why should the able and worthy and thrifty members of society be compelled to pay as they are, in Kentucky alone, over three hundred thousand dollars annually, to say nothing of the immense sums voluntarily contributed toward "charitable" purposes for the support of the criminal and pauper defective classes who themselves contribute nothing of value and whose very existence is evidence of criminal disregard of the right of every individual to be well born, into a sane and healthy life? The only answer, if it be an answer, is, because the competent are willing to foot the bill.

The provisions of the new law, if properly amended, enforced and carried out, will not only lessen the number of the mental defectives, whom to permit to be born is a crime against society, but will also lessen the number of crimes.

A high percentage of the women law breakers of Kentucky are feeble-minded. It is within the bounds of reason to state that sixty per cent of the inmates of State reform and training schools for girls, are mentally defective. Their offenses are violations of the moral code.

Only under the most careful and constant

supervision can the feeble-minded girl be protected. Without this supervision she goes back to her original law violations. She becomes the inmate of the disorderly resort, the street walker, the woman who comes again and again into the police and other courts. She bears feeble-minded and diseased children. She scatters venereal diseases through every community and if the moron girl is not recognized before puberty her fate will almost invariably be the life of the under world; she may and usually does become criminal. In any event she almost certainly becomes the mother of defectives. The moron man becomes the petty offender against social laws; he may marry but married or not he certainly becomes the father of other defectives. Both help to fill our police courts, jails, reformatories and prisons costing the State a great deal of money that would be better expended in keeping them from harm on a colony farm where their employment would be of some value to themselves and others.

Eighty per cent of alms house population in Kentucky are feeble-minded.

The chief menace of the feeble-minded woman in the alms house is the potential mother of the feeble-minded child. The child of the feeble-minded woman and the almshouse man will be for its entire life a burden on public charity. There is in almost every community in Kentucky a group of feeble-minded families. These families are dependent on public charity. They are also the law-breakers. The number of children in these families rapidly increase and the new generation is a degree lower in intelligence than the parents. These families lay upon the State one of the heaviest burdens which it has to bear. They know nothing of law, order, or moral and physical decency. The children are not only feeble-minded but are often blind, crippled, deaf and diseased. Those who are sent to school are a constant source of danger to other children.

In Louisville a short time ago, one hundred and twenty-six women, who were quarantined in the jail, were examined by Captain H. B. Cummings, Camp Psychologist at Camp Taylor. The examination of these women was made at the request of Surgeon F. D. Fricks, of the United States Public Health Service. Of the 126 examined, sixty-three were feeble-minded; thirty-three high grade morons and twenty-eight were normal. The mental ages ranged from six years and three months to fourteen years and ten months. These women were all victims of venereal disease. The point of the situation is, said Doctor Fricks, these women are mentally children. They are not capable of taking care of themselves and if they are cured of their venereal infections, they are released only to become diseased again and to continue an endless chain of misery for themselves, and an expense for the county and city. But they are not only an expense they are a danger to the community as they are constantly spreading disease. What they need is a suitable place of quarantine where they can be cared for properly as feeble-minded or high grade morons are cared for." Segregation and permanent control by the State on the colony farm is the solution of the question.

In addition to the examination made of the women in the county jail, sixty cases were examined by Henrietta V. Race, Director of the Psychological Laboratory, administration building, of Louisville Public Schools, with the following results:

Normal intelligence	8
Inferior intelligence	8
High grade morons	9
Feeble-minded	35

All of these were brought to Miss Race by the Associated Charities. Proper psychological examinations would realize the same deplorable conditions in every community in the State.

Many states in which training camps were established reported increased delinquency among women and girls, invasion by hordes of questionable characters from other states and the break down of the jail system due mainly to the inability of local authorities to deal adequately with the venereally diseased prisoners. Congress has enacted and put in force Federal legislation for protection of soldiers and sailors. Municipal and state authorities have cooperated with the Federal government in meeting this situation. South Carolina and Michigan have followed Massachusetts in requiring that certain venereally diseased persons shall be quarantined until cured. Minnesota, Massachusetts and California have been especially active in measures to control venereal disease, a movement that has taken on new life now that the American Medical Association, the American Public Health Association, and the Army and Navy Departments have declared that a life of continence is compatible with health. Kentucky is cooperating with the Federal government. South Carolina's legislature of 1918, established an industrial school for girls and an institution for the feeble-minded with appropriations of $40,000 and $60,000 respectively. The committee on protective work for girls secured $250,000 of Federal funds to be used in providing institutional facilities for dealing with prostitutes. Minnesota has enacted a law

providing for the commitment of the feeble-minded to state control, whether the alleged feeble-minded person or his relatives desire it or not. The measure is designed to protect the community and to provide wise and humane care for the mental defectives.

The United States Public Health Service, in a pamphlet (War on Venereal Diseases) says, "Before the war most physicians and public health officers knew that gonorrhea was every year causing blindness among infants—Miss Linda Neville can tell you about the Kentucky cases—countless surgical operations on women, and sterility in men and women: that syphilis was being transmitted to offspring causing physical and mental defectives, that it is a prolific cause of locomotor ataxia, paralysis, paresis or softening of the brain, insanity, miscarriages, diseases of the heart, blood-vessels and vital organs. But generally people did not know these things and few remedial measures were taken. The war opened our eyes. The reports of draft-boards and camp surgeons revealed for the first time clearly, the menacing seriousness of the venereal problem and the failure of our pre-war attitude towards the whole question.

Diseased prostitutes are the most dangerous carriers, they must be quarantined and the community safeguarded against their return as prostitutes, First: by means of permanent segregation of the feeble-minded, and second: by medical treatment and industrial education for the others.

This is not a job for sentimentalists, or fly-by-night enthusiasts. It is a task for hard-headed business and professional men and capable women. It is a job for citizens who feel responsible for their community and their nation in times of peace as well as war.

Present research has shown that feeble-mindedness is so closely linked with the increasingly serious problems of vice, vagabondage, pauperism and crime, that some authorities are insisting that as high as fifty per-cent of all criminals are feeble-minded. In Massachusetts, Dr. A. Warren Stearns and other psycho-pathologists found evidence of feeble-mindedness in fifteen per cent. of the inmates of the reformatories for men, twenty-four per cent of the unfortunates confined in the reformatory for women, twenty-three per cent of the criminals in the Charleston state prison and over fifty per cent of a large group of immoral women. About twenty-five per cent. of a thousand delinquent boys and girls in Ohio were found by Dr. Thomas H. Haines to be feeble-minded.

Dr. Bernard Glueck, director of the psychiatric clinic at Sing Sing prison, in a mental survey of six hundred consecutive admissions to the prison discovered that no less than twenty- eight per cent of the convicts examined had a mentality inferior to that of a twelve year old child. Dr. Henry H. Goddard, testing the mentality of one hundred children brought on various charges before the juvenile court of Newark, New Jersey, found sixty-six per cent. distinctly feeble-minded. The same investigator, studying the relationship between alcoholism and feeblemindedness was led to the conclusion that at least twenty-five per cent of drunkards are drunkards because they are feeble-minded and unable to control their appetites. Applying the standard mental tests to large groups of school children, in many states, mental deficiency was found so prevalent that the investigating scientists deemed it conservative to affirm that at least two per cent of school children, or one in two hundred of the population are feeble-minded. This would give the United States a feeble-minded population of more than five-hundred thousand. Since feeblemindedness is inheritable, so that a feeble-minded person is likely to have a feeble-minded child, even when mated to a person of normal mentality—the gravity of the menace thus constituted to the future of the United States is obvious.

Kentucky should follow the lead of Minnesota and enact a law providing for the commitment of all her feeble-minded to State control "whether the alleged feeble-minded person or relatives desire it or not," only in this way can she prevent the increase, and lessen the number of her feeble-minded population.

The United States Public Health Service is becoming thoroughly aroused in regard to the menace to the Country, threatened by the nation wide spread of mental defectiveness.

In the last Public Health Report, February 14th, Surgeon General Rupert Blue, says, "With the increasing recognition by health authorities of the significance of mental diseases as a health problem, there is a growing demand for assistance in the formulation of a program of practicable control and preventive measures which can be inaugurated by health administrators. The United States Public Health Service plans to carry on as rapidly as funds become available for such purpose the following program of activities. Such a program should take into consideration:

A. The most effective means by which the several Government agencies can cooperate in studies and investigations of mental hygiene.

B. The problems of better care and treatment of the insane, mental defective, and epileptic.

C. Measures for the prevention of mental disorders.

So far as these considerations are concerned the studies and investigations already made by the Public Health Service indicate the following activities as desirable and practicable.

A.—COOPERATION WITH OTHER GOVERNMENT AGENCIES

1. In addition to the duties prescribed by law as related to the mental examination of arriving aliens, cooperation with the Department of Labor (a) to establish a school for the training of medical officers as mental hygienists, (b) to provide facilities for training nurses and assistants for duty in mental hygiene work and (c) to investigate the care and treatment of insane aliens confined under immigration laws in public and private institutions at Government expense.

2. Cooperation with other bureaus of the Treasury Department in the mental examination of coastwise pilots, locomotive engineers, and train dispatchers as a safe-guard to the traveling public.

3. Cooperation with other departments or bureaus of the Government to devise practical methods for the mental examination of Civil employees of the Government with a view to determine their fitness for different occupations.

4. Cooperation with the Department of the Interior in the study and prevention of insanity and mental deficiency among the wards of the Government, such as Indians, Esquimaux, and other primitive races for which the Government is responsible.

5. Cooperation with the Bureau of Education in the revision of educational methods from the standpoint of mental hygiene.

6. Cooperation with the Bureau of Education in devising practical plans for the establishment of special classes for the training of feeble-minded and delinquent children.

7. Cooperation with State departments of justice and other agencies to secure (a) the adoption of a model law providing for the early treatment of mental disorders, (b) the enactment of a model commitment law, and (c) the establishment of psychiatric pavillions in general hospitals.

8. Cooperation with Federal and State departments of justice to secure the establishment of psychiatric clinics in connection with the courts to determine the mental status of criminals, dependents, and delinquents appearing before the courts.

B.—PREVENTION.

1. Cooperation with State and local agencies to secure the adoption of a law making certain types of mental disorders reportable to the health authorities.

2. Reviewing and publishing State laws of commitment of the insane and feeble-minded.

3. Cooperation with the State and other agencies to determine the prevalence of the insane, feeble-minded, alcoholics and epileptics.

4. Investigating the prevalence and the care and the treatment of the insane, epileptics, feeble-minded, criminal, and dependent classes.

5. Compiling a national reference index of the literature on mental hygiene.

6. Investigating mental status in relation to certain constitutional diseases and drug addiction.

7. Cooperation with the industrial hygiene unit of the United States Public Health Service in the studies and investigations of the mental status of workmen as related to output, fitness for the job, protection from health and injury hazards, and permanence of employment.

8. Cooperation with the child hygiene unit of the service in the study and investigation of insanity in children and of the personality of the potentially insane.

9. Cooperation with the Division of Venereal Diseases in studies and investigations of the mental status of prostitutes and of the relation of venereal diseases to mental disorders.

LEGISLATION.

If the Kentucky Division of the National Council of Defense and the Federated Clubs of the State will lend their aid and influence, I believe that the next General Assembly can be induced to amend the New Feebleminded Law so as to correct some errors of vital importance which will make it almost ideal.

First of all the most important of all, the Legislature should be asked to take such action as will Divorce our Charitable Institutions entirely and forever from political control. Unless this is done very little, if any, progress can be made toward lessening the number or improving the condition of our mentally defective population. Every state eleemosynary institution in Kentucky is handicapped by the blight of political control. The Board of Control, which under the law is supposed to have the entire and supreme management of all these institutions, is itself hampered by the same political frost. Ostensibly it has supreme control of the affairs of the State Hospitals for the Insane; of the Feeble-minded Institute and Institution; of the schools of reform, for the blind, for the deaf and of the penal institutions of the State.

It is supposed to select and appoint superintendents and assistant physicians; the steward, the receiver for all institutions for mental defectives, insane or feeble-minded. It is supposed to select the warden and the guards of the penitentiary at Eddyville and of the Reformatory at Frankfort. Hypothetically this is true but as a matter of fact the Board of Control has no such power or privilege. The Administration alone has the power to make these appointments and does make them, it also appoints the members of the Board of Control.

It is encouraging to know that two candidates for Governor and one for Lieutenant Governor, have announced in their platform, to use, if elected, their influence to have this wrong corrected.

Mr. Edward W. Hines, Chairman of the Kentucky Council of Defense in a letter to me says, "I am ready to aid you in any way within my power in having our charitable institutions entirely and forever divorced from political control." I think the Feredated Clubs will also aid. Civil service reform—if applied in the selection of the Medical Staff of these institutions would perhaps go far toward accomplishing this divorce.

COMMITMENTS.

Proper examinations by competent psychologists and psychopathists for diagnosis and to determine consignment to proper institutions of all mental defectives coming before courts —also for criminal delinquents, should be imperative. The early recognition of mental disorders cannot be generally expected until medical schools give more attention to them. It is a generally accepted fact that the majority of graduates from medical schools have very little, if any, knowledge of the nature of mental diseases, because they have had little or no opportunity to study this branch of medical science.

(Suggestion that psychology and psychopathy should be taught in the medical department of the University of Louisville should be made.)

PROVISION FOR NEGRO FEEBLE-MINDED.

J. L. Kesler, Dean, Baylor University, Waco, Texas, in speaking of "The Negro in Relation to our Public Agencies and Institutions," says, "The negro problem, public or private, industrial or institutional, is a human problem. Every injustice to the negro from public agency or private is an injury to the white man and imperils the best interests of the national life. If the Negro is to be a citizen, if he is to live among up, (and we of the South like him, would not be without him, and count ourselves his best friends), then we must give him a chance, and an equal chance with all others. There are men and women who have social sympathies and social interests and who take part in and support all agencies and institutions working for the welfare of the community life. It is true that we have not yet gone far in cooperative social work. The juvenile Negro criminal and delinquent girl (the majority of whom are feeble-minded), are not sufficiently provided for by either private or public institutions; nor is there sufficient provision for the juvenile offender of the white race. But the old way of making confirmed criminals out of this raw material is to yield to educational and preventive measures. It is true also that sanitary prison reforms, settlement work, and public welfare enterprises generally have too largely left the Negro out of count. Cooperative welfare agencies have made hopeful beginnings, however, in Louisville, Nashville, Atlanta, Richmond, Virginia, and a few other places. We are beginning to wake up: We are moving toward a better day. We are beginning to see that the negro is an asset or peril as we help him to rise or let him alone."

The Negro is well cared for in all our State Hospitals for the Insane, but no provision is made for him in our Feeble-minded Institution. Is that fair? Is it right?

OTHER AMENDMENTS THAT SHOULD BE MADE.

Abolishment of committees and guardians and parole for the feeble-minded. To make it the duty of all health officers, district and county nurses to report all feeble-minded persons whom they discover, to the proper county officials.

Registration. Make a census as complete as possible, of feeble-minded in the State, obtaining all possible light on their family histories and surroundings. (This should be done by Fiscal Court).

Registration and examination of all prostitutes—physical and mental.

Dr. Paul E. Powers, who has been doing psychological and psychopathic work for the Federal Government in the army mobilizing and training camps, in his book the "Pawns of Fate," says, that "Chief Justice Kennington was the father of the idea that every court in the land should have attached to it a psychopathic laboratory where the mentality of criminals is investigated, where, in truth, all the factors that plotted against man for his downfall, are carefully studied. In the court over which he presided the facts of the violation of the law were first carefully determined; then the report of the medical investigation was submitted to the judge after conviction and before sentence was pronounced. This information furnished the judge

with the knowledge that would enable him to decide whether the individual should have a suspended sentence, be sent to prison, to a hospital for the insane or to an institution for the feeble-minded. The courts of the big cities recognized the value and justice of this judicial reform and established such laboratories. The prisons heard the call. Great changes are being worked out in their administration. The political grafters, who had so long held sway are being sent about their business and scientific men put in their places. The prisons became schools for the training of the hand, head and heart, they became hospitals also, where all remedial medical and surgical defects were taken care of; where prisoners were freed, if possible of their mental and physical burdens; while those who were found to be incurably defective, no matter what their crimes might be, great or small, were kept in permanent custodial care for their own benefit, and the welfare of society."

The fact that investigations made by the Division of Psychology of the United States Army, directed by Major Robert M. Yerkes have shown that approximately twenty per cent of the drafted and enlisted men that have been mobilized were so inferior mentally and physically as to be unfit for regular military service, together with the recognition of the wide prevalence of mental defect among confirmed prostitutes, those, therefore most likely to be venereally diseased—these facts are stimulating the Nation in the movement for provision for the feeble-minded—all prostitutes should be transferred to the colony farm for health and treatment as well as to prevent their spreading venereal diseases.

Treatment of Enlargement of the Thymus.—A recent abstract in the Correspondenz-Blatt fur Schweitzer Aerzte states that W. Birk insists on the absolutely different clinical picture presented with simple enlargement of the thymus and that with the thymus-lymphatic state. The former, simple enlargement of the thymus, usually develops during fetal existence, and the trachea is compressed by the abnormally large thymus even before birth. Death is the result of suffocation. the already damaged trachea becoming compressed to the point of suffocation. The status thymico-lymphaticus, on the other hand, is not congenital, and in this the constitution and the food are of paramount importance, while these have no influence on the congenitally enlarged thymus. But the latter can be modified by the roentgen rays, and Birk reports five cases in which the excessively large thymus promptly shrank to normal size under the exposures. In one case the gland enlarged again later, but in all the others the cure was prompt and permanent.

UTERINE PROLAPSE WITH CYSTOCELE.*

By Jno. R. Wathen, Louisville.

The purpose of this paper is to present for your consideration an operation for the cure of cases of pronounced cystocele, i.e., hernia of the bladder and the associated condition of prolapse of the uterus, so often seen in elderly women, although it may occur in younger women who have borne children.

The technique will be illustrated with lantern slides.

When we appreciate the fact that prolapse of the uterus and cystocele of the urinary bladder are really hernias, we are in a better position to understand the essentials of successful treatment.

This is a complex condition affecting the uterus and many other pelvic organs and structures and has been looked upon up to recent years as almost incurable by both the profession and the laity.

I will intentionally leave out of consideration pathological conditions as simple retroflexion of the uterus so often occurring in younger women for which the operations of Alexander, Gilliam, and others were devised.

Likewise, I have omitted a consideration of the operations of Murphy and of Mayo in which the uterus is removed either as an abdominal hysterectomy or a vaginal hysterectomy, as these operations all have their place in surgery and are not so well suited to the condition under discussion.

The operation for the cure of this condition was developed as a gradual evolution of various methods by foreign surgeons and it was especially brought to our notice in this country by the one whose name it bears—the Watkins operation of inter-position of the bladder, which consists of so placing the bladder that it is put backward into the peritoneal cavity, resting upon the posterior surface of the uterus, and the uterus is fixed to the anterior vaginal wall, acting as a buffer against any descent of the bladder—fixing the uterus in a position from which it can never retrovert or markedly descend or prolapse; for retroversion is the first step in the development of marked ptosis or prolapse of the uterus.

While this operation is especially applicable to those women past the menopause, in which class we see the largest number, it is nevertheless of value in women still menstruating if we will remove a section of each tube to prevent future pregnancy.

The operation has never been in general use

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

for the reason that its technique is somewhat difficult, at least for the average surgeon, and should be undertaken only by men of experience in gynecological surgery.

The best results from this operation are obtained in cases where there is a firm uterus of average size.

In those cases where the uterus comes out of the vagina in the ante-verted position, or in those cases of extreme prolapse to the third or fourth degree, a vaginal hysterectomy in which the broad ligaments are sutured together in the mid-line under the bladder, as advised by Mayo, is the best method of proproducing a radical cure.

The technique of Watkins inter-position vaginal operation is briefly as follows:

1. The cervix is pulled downward and held by a volsellum forceps and a transverse vaginal incision is made across the vaginal wall in front of the cervix and below the bladder.

2. The anterior vaginal wall is separated from the bladder by blunt dissection with Mayo scissors and is divided in the mid-line from the cervix up nearly to the urinary meatus.

3. The bladder is now separated from the anterior wall of the uterus by blunt dissection with gauze, and when the plica of peritoneum is reached it is opened and a retractor with a narrow blade elevates the bladder away from from the uterus.

4. The anterior wall of the uterus is now grasped higher and higher with bullet forceps until the fundus of the uterus is reached and readily delivered into the vaginal canal.

5. The bladder is pushed back into the peritoneal cavity and lies on the posterior wall of the uterus. Interrupted sutures are now introduced through the flaps of the vaginal wall and the anterior surface of the uterus, which is below the bladder. The excess of vaginal mucosa is cut away so as to leave only enough to neatly approximate its edges across the anterior uterine surface. The cervix should now point to the hollow of the sacrum and the fundus of the uterus to the symphysis. If the cervix is too long, it should be amputated. A repair of the perineum completes the operation.

The brilliant results obtained from this operation cause the writer to feel that the general practitioners and the surgeons should have a better appreciation of its possibilities and merits.

DISCUSSION:

Woolfolk Barrow, Lexington: The subject presented by Dr. Wathen is very interesting to me. In 1910 I wrote an article on the same subject which was published in the Kentucky Medical Journal. I have had an experience of over forty cases with this operation, twenty-three of them my own cases, and of that twenty-three there was a cure effected in twenty-one cases. One of the cases I operated on a second time and found tuberculous peritonitis. I suppose that is the reason why healing did not occur in this case. The other failure I attribute to poor after-treatment. This patient was allowed to return home by the physician for whom I operated on the eighth day. These cases in my opinion should be confined to bed for at least two weeks before they are permitted to sit up.

There are two or three points about the operation that are important. First, a complete separation of the bladder. If you separate the bladder incompletely you will have little pockets where it is adherent to the uterus when you attempt to push it up into the abdomen. This will cause a marked cystitis which it is almost impossible to cure. In the operation I think it is necessary to curette the uterus. These uteri are large, subinvolved, practically always retroverted, and curettement stimulates a return of the uterus to the natural size. It think it is also necessary to always amputate the cervix, even though it is short. In nearly all cases the cervix is enlarged, sometimes three or four inches long, the whole uterus protruding outside, and often ulcerated, so I think it is very essential to amputate the cervix as it produces new adhesions. You have to complete the operation by a high colpoperineorrhaphy which acts as a support to the uterus. If you place the uterus in the ante position it will not stay there unless the levator muscles are approximated and act as a support for the uterus. The operation commonly goes by the name of the Dnhrssen, Watkins, or Wertheim operation. It is also called the interposition operation. Dr. Watkins, of Chicago, perfected the operation in this country. Statistics prove that this method of operation for procidentia gives a better percentage of cures than any other method. The greatest disadvantage is the necessity of sterilizing the patient if she is in the child-bearing age. Fortunately most procidentia cases have passed the menopause. To sum up, this operation in properly selected cases I believe offers the best prospect for a cure in procidentia cases.

J. R. Wathen, Louisville, (closing): I have been employing this operation since 1908 when Professor Martin demonstrated it in this country, and its evolution is the work of a number of different operators, such as Wertheim, Martin and Watkins. In this country credit is given to Dr. Watkins, as well as to Wertheim and others, although Martin claims at the time to be the originator. It is not a question of who is the originator of the operation, as one man improves one point, and another the other. As I have said, I

have used it since 1908, and hardly a week or month passes that I do not have these cases to deal with. They are constantly occurring, and our statistics have become large as regards the number of cases, and the results have been universally satisfactory. There has been no fatality, but I can understand how fatality can occur, and any one who is conversant with the manner in which Dr. Martin operates and notices his method of preventing hemorrhage and the accumulation of blood will understand how to prevent infection. I have had some failures following the method advocated by Dr. Barrow. In these cases you must establish a proper proportion. This operation is especially suited to uteri of average size. If we make the cervix too small we do not fill up the entire space. The uterus should lie from the pubic bone almost down towards the cul-de-sac. If you attempt to have too much cervix and hold up the fundus high with ligatures, it leaves spaces in the cul-de-sac which are liable to produce an ugly hernia, dissecting loose the rectum and posterior vaginal wall and causing trouble. If we make it a universal practice to amputate the cervix in all cases we will have that result. I have had such a result in two cases and it is an ugly condition to treat. It is the proper proportion and selection of these cases that determine the results. A great many men claim failures and have not succeeded because they have selected the wrong cases for the operation. There are cases in which the Gilliam operation is indicated or the Alexander operation. Whether you do the Mayo, the Murphy, the Watkins operation, or any other operation, careful technic will determine your end results. I must say, it is the most gratifying of all operations we have ever had. Up to the time when this operation was devised for this particular class of cases surgery was a failure, and we can now offer to old women with falling uteri and descent of the bladder great relief by this operation.

In regard to the cystitis, that can be avoided by proper care. In these cases when you transplant the bladder, to a large extent you injure the nerve supply which comes from below. When you dissect loose, some of the structures some of the nerves are destroyed. I give large doses of strychnia. These patients should be catheterized for at least the first week, put on urotropin, and any infection which develops should be washed out with Dakin's solution, and we can thereby avoid a troublesome cystitis. The only complication is infection or cystitis, and we can overcome this. The operation is one capable of doing great harm if improperly performed.

WOUNDS AND INJURIES OF THE RECTUM AND ANO-RECTAL REGION.*

By Bernard Asman, Louisville.

Despite the protection afforded the rectum and anus by virtue of their anatomic location—between the projecting gluteal tissues and the surrounding bony pelvic structures—wounds and injuries occur with sufficient frequency in this region to demand serious surgical consideration. Where the trauma inflicted is inconsiderable, only the ano-rectal tissues may be injured; but in more extensive wounds the pelvic and abdominal viscera are usually damaged in greater or lesser degree; therefore such injuries may be properly classified as simple or complicated. Ano-rectal wounds and injuries may be inflicted by a great variety of both internal and external agencies, and like traumatic lesions elsewhere may be contused, lacerated, incised or perforating.

Contusions may be the result of internal agencies, such as pressure of the fetal head during prolonged and difficult labors, from the presence of pelvic neoplasms, improperly applied pessaries, foreign bodies, the unwise procedure sometimes practiced of forcibly divulging or "stretching" the sphincter muscle; and from external agencies, such as automobile and railroad accidents, knife and bullet wounds, kicks, balls or blows upon the buttocks, lower abdomen, etc. In the latter type portions of the intestine other than the rectum are usually also injured.

Lacerations may also occur from both internal and external causes. Inordinate fecal impaction has produced laceration of the ano-rectal tissues; lack of care in manual or instrumental manipulations may produce injury; sharp-pointed syringe tips especially if made of glass may be forced through the rectal wall or be broken during use and thus cause extensive damage; and the same is true of rough and otherwise defective irrigation tubes. Kicks or blows, pederasty, dilators and bougies, have been known to inflict considerable damage upon the ano-rectal interior. The rectal wall may be injured during mechanical investigations and surgical operations upon the urocyst, prostate, urethra, and the pelvic or abdominal viscera; by the passage of foreign bodies, such as bones, enteroliths, fishhooks, pieces of glass, metal, etc.; also by the presence of extraneous bodies introduced from without, and by falling upon rough or irregular objects which penetrate the rectal lumen. "Chamberpots have broken while the patients were sitting upon them, resulting in laceration

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and severe hemorrhage, even in severing the external sphincter, and resulting in partial incontinence."

Under the heading of lacerations should be mentioned rectal rupture. This has occurred during instrumental treatment of rectal stenosis, also by forcible introduction of endoscopes, and distension by air or gas for diagnostic purposes. Rectal rupture has also been reported following forcible insertion of the hand, the use of too large operating specula, and accidents of various kinds.

Incised wounds are usually the result of knife thrusts, but may be due to other causes, such as sitting or falling upon cutting instruments; also from the passage of foreign bodies, such as sharp pieces of bone, glass, metal and other angular cutting objects. Not infrequently the rectal wall has been damaged during surgical operations upon contiguous structures. Tears have occasionally occurred from impaction of the fetal head, during crushing operations for urocystic uroliths, from pelvic and abdominal abscesses, etc.

Perforating, penetrating or punctured injuries of the ano-rectal region are usually due to bullet, knife or bayonet wounds, or sharp points of foreign bodies introduced from without or more rarely swallowed. Sometimes foreign bodies secreted within the rectal pouch or swallowed by insane persons cause serious damage to the ano-rectal tissues. Accidental puncture has occurred during urethral instrumentation, and surgical operations upon adjacent structures; and forceps, gauze, etc., left in the pelvic cavity have perforated the rectal wall and thus found exit from the body. Probably the most frequent cause of rectal perforation is faulty technique in the giving of enemata, particularly when self-administered and glass or other unsuitable tubes are employed. Improperly applied gauze packing in the attempted control of hemorrhage may cause serious injury. Ischio-rectal, pelvic, spinal and coccygeal abscesses sometimes perforate the rectal wall.

More or less serious damage to the rectal tissues has occurred from the injection of phenol and other strong solutions in the attempted cure of hemorrhoids. Violent inflammation, abscess, tissue sloughing and fistula have been thus produced; and the same statement will apply to the employment of acids, silver nitrate, cautery, etc.

Superficial injuries about the ano-rectal region oftentimes follow inordinate scratching by the finger-nails of the patient to relieve persistent pruritus ani.

The clinical manifestations induced by ano-rectal wounds and injuries vary according to the instrument which inflicted the trauma, the extent of the damage to the tissues, the anatomic situation involved, the time which has elapsed between infliction of the injury and observation of the patient, and also the nature of the wound, i.e., whether contused, lacerated or perforating in character. The higher lesions are the most serious because of the likelihood of pelvic and abdominal complications. Contusions and lacerations are attended by less clinical danger than perforating and punctured wounds; the former are more likely to be superficial than the latter and adequate drainage can be more readily secured.

The most dangerous type of injury is rectal or colonic rupture which permits the escape of blood, gas, feces and pathogenic micro-organisms into the pelvic or abdominal cavity, the most logical result being the supervention of infection with the production of peritonitis, abscess, or fecal fistula. Even superficial wounds may result disastrously provided drainage is inadequate and infection with tissue sloughing ensues. However, if surgical treatment be promptly instituted and rigid asepsis maintained infection of clean wounds should not occur.

In the majority of instances ano-rectal wounds are attended by pain and tenderness from sphincteric irritation and contraction; the tenesmus may vary markedly in degree, depending upon the extent and character of the injury. Pollakiuria or urinary incontinence may be observed as a concomitant manifestation.

Hemorrhage and shock will depend largely upon the location, character and extent of the damage. In rectal injuries distal to the peritoneal attachment shock is seldom noted unless hemorrhage has been considered; but where the upper rectal segment, the colon or the pelvic and abdominal viscera are involved, shock is usually profound and persistent. Secondary hemorrhage sometimes occurs where the vascular channels are seriously injured or infection and sloughing supervene.

All the clinical manifestations are intensified by supervention of infection. Rigors, rapid pulse, high temperature, increased pain and other characteristic symptoms are present. The toxemia persists until satisfactory drainage is established or the necrotic tissues are removed, when the symptoms should gradually subside in the absence of a complicating peritonitis. In practically every instance abdominal distension is noted where injury occurs proximal to the peritoneal attachment. In severe ano-rectal injuries the urinary symptoms already mentioned are usually observed. The pulse and temperature may re-

main normal where only the lower rectal segment and the anal cavity are implicated.

The chief complications to be feared in ano-rectal wounds and injuries are: "Abscess, recto-vaginal, recto-cervical, or recto-urethral fistula, fecal inconinence, stricture, hernia, fecal fistula, urinary or fecal extravasation, sloughing of the mesentery, peritonitis, phlebitis, pneumonia, and necrosis of the sacrum, coccyx, or pelvic bones."

The clinical diagnosis of ano-rectal wounds and injuries entails no especial difficulty. It is important to ascertain the nature of the traumatic agent and to observe the degree of swelling, edema, laceration or contusion and ecchymosis about the peri-anal tissues. Digital and instrumental examination will demonstrate the extent and character of the ano-rectal damage; but for obvious reasons the ordinary probe should be used with caution.

Where the surgeon has reason for believing the injury extends to the upper rectal segment, the sigmoid or colon, immediate celiotomy is indicated as a diagnostic measure, and at the same time to permit the necessary reparative procedures. The extent of the damage inflicted upon the lower rectal segment and the anal canal may be easily determined by ocular inspection.

The treatment of ano-rectal wounds and injuries is primarily and essentially surgical, and the technique of reparative measures must be modified to meet the indications in each individual instance. The operative steps necessary will depend upon the location, nature and extent of the damage inflicted. While intricate technical details cannot be included in this paper a brief summary may be permitted.

Contrary to the belief hitherto prevailing, aseptic technique is just as important in the treatment of ano-rectal wounds as those in other anatomic situations. Where infection has not already supervened its prevention is possible by the maintenance of rigid asepsis, and in clean wounds primary healing may be obtained. Soiled wounds should be immediately cleansed and hemorrhage arrested. Incised injuries are closed by immediate deep and superficial sutures of catgut or other suitable material, and in some instances drainage is advisable as a precautionary measure. Multiple drains may be advantageous where there is considerable tissue contusion and laceration. All ragged and irregular wound edges must be carefully removed before application of dressings, and irrigation should be practiced if necessary in the judgment of the surgeon. The alvine evacuations should be kept semi-solid by the administration of suitable agents until healing has occurred.

In the treatment of all simple or complicated wounds and injuries in the ano-rectal region, especially those involving the lower segment and the anal canal, the importance of the spool-shaped (Asman) dressing tube exhibited before this society several years ago is again emphasized. By the application of this simple device soiling of the wound is prevented, the expulsion of gas, blood, mucus and feces permitted, and pain reduced to the minimum. I am aware of no other device by which these desiderata may be so readily obtained.

The various complicating injuries and their treatment can be accorded only brief consideration. Urocystic and urethral perforations should be immediately repaired where feasible; otherwise the urocyst may be drained and such wounds allowed to heal by granulation. Recto-vesical injuries may be successfully repaired by immediate suture provided infection has not already occurred. Wounds involving the upper rectal segment and colon must be treated through a suitable celiotomy opening. Resection and anastomosis may sometimes be required where extensive intestinal damage has been inflicted. Colostomy should be practiced only as a *dernier resort* as a life-saving measure. Recto-vaginal perforations should be closed by the application of proper sutures, the vaginal wall being primarily approximated and the rectal edges then united.

Following the repair of complicating injuries to the pelvic and abdominal viscera, the Fowler position should be maintained for several days. Cold applications are useful to minimize the danger of infection and facilitate healing. Injuries due to acids, phenol, silver nitrate, etc., should be treated according to the individual indications.

This paper would be incomplete without reference to ano-rectal wounds produced by bullets and other agencies in those engaged in actual warfare. It is worthy of note that the mortality from such war injuries has been in the past extremely high, probably because of infection and delay in the institution of surgical treatment.

According to Tuttle records of the civil war in this country show that of one hundred and three recorded cases of rectal gunshot injuries forty-four (42.7 per cent) resulted fatally. In the Franco-Prussian war there occurred thirty-one rectal wounds with fifteen deaths. In one man the rectum was penetrated by a weed over which he squatted for purpose of defecation; the sharp point entered about one inch from the margin of the anus and penetrated the rectum half an inch above the internal sphincter.

Mocquot and Fey recently communicated to the Paris Surgical Society their observations in thirty cases of projectile wounds of the rectum. Among these were four wounds of the peritoneal portion of the rectum, nineteen of the extra-peritoneal rectum and anus, and seven of the recto-urinary passages. Among those of the peritoneal portion, there were four penetrating wounds of the abdomen with multiple visceral injuries. The projectile wounded the rectum in each case, the small intestine in three, the rectum in two, the mesentery in one. In three cases the rectal injury was discovered and treated in the course of celiotomy; in one it was not recognized. Of these four patients one was in shock and died a few hours after operation; one was operated upon twenty-three hours after being wounded, peritonitis had already developed and he died the next day; the third whose rectal wound remained undiscovered died on the fourth day; the fourth patient recovered. In this case there was "besides the rectal perforation a perforation of the small intestine and a wound of the mesentery from which blood was spurting."

In wounds of the extra-peritoneal portion of the rectum and anus—nineteen cases—the treatment included attention to injuries of the soft parts and the bony skeleton; treatment of the rectal wound and exclusion of the rectum by making an artificial anus. The authors state that these wounds often being gangrenous it is necessary to freely excise the track of the projectile and to extract all foreign bodies. In wounds of the anal canal it is inadvisable to suture but allow healing by granulation even at the expense of subsequent formation of stricture. On the other hand wounds of the ampulla should be sutured, but always with exclusion of the rectum and the making of a colostomy. Of the nineteen patients in this group, ten were cured by operation and nine died.

In seven cases besides the rectal wounds there was also injury of the urocyst or urethra. In case the injuries were the results of wound inflicted in a sagittal direction—two perforating bullet wounds, and four obscure wounds caused by shell fragments. The patients with wounds of the upper rectum and urocyst—four in number—all developed recto-vesical fistula. One seen early was cured by cystotomy and suture of the rectal wound. The remaining three seen late were infected and died even though colostomy was performed.

Mocquot and Fey state that immediate cystotomy is the treatment of choice in recto-vesical wounds. Colostomy may be of value if there is also much injury of surrounding soft tissues and bones. Direct suture is indicated only in wounds of the peritoneal portion of the rectum and of the urocyst. These are abdominal cases and celiotomy is effective.

Quenu's observations cover patients seen only during the secondary period or late. He believes the suture question is debatable; from his limited experience he would be inclined not to suture but to make the debridgement of the rectum and anus as extensive as possible. In his opinion ample excision of dead tissues in the rectum offers more protection against pelvic cellulitis and diffuse gangrene than a colostomy does. "Perhaps it might be well to reserve colostomy for cases of destruction of the anus, for these lesions entail stricture, with obligation, necessitating a colostomy, which might as well be done immediately.

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DISCUSSION:

Francis S. Clark, Cloverport: I only wish to say that the profession ought to be thankful to Dr. Asman for the presentation of this excellent paper, and some of the points brought out by him could very well be taken home. One special point is that of treating wounds of the rectum as surgical cases where asepsis can play an important part. It has been universally considered that diseases of the anus and rectum are unpleasant to encounter; that these regions are dirty, and in many respects asepsis is entirely overlooked.

One point I would like to emphasize in wounds of the rectum is that injuries in this region often come from children swallowing foreign bodies. I have known two cases that were treated for bowel trouble or entercolitis following bloody discharges from the rectum. In one case, after a thorough digital examination, it was found to be a bolt that the child had swallowed, which was three-sixteenths of an inch in diameter and three and a half inches long. It came out of a little savings bank, and it was removed four days later.

In another case a nail was found in the same location. This child had been medicated thoroughly and the nail was found to be the cause of the trouble.

One point I would like to ask the doctor about is with reference to tubercular abscesses and the damage they do, and if they are not the cause of inflammation around the rectum in a large percentage of cases.

I am sorry that he did not further dilate on

the treatment of injuries to the sphincter that bring about incontinence of feces. That is an important point in the routine of the every day practitioner's work.

E. A. Stevens, Mayfield: I want to speak of one case of injury of the rectum I had an opportunity to deal with. A farmer was on top of a haystack; he slid down off the haystack without noticing what he was doing. A pitchfork was lying against the haystack with the handle broken diagonally across. In sliding down the sharp end of the handle, not the pitchfork, caught in the anus; it passed through the anus without wounding it. There was no outward sign of injury; it passed through the posterior wall of the bladder just at the junction of the prostate gland and out through the fundus of the bladder up into the abdomen. When I saw that case there was absolutely nothing to show that the rectum was injured. The treatment was celiotomy, sewing up the bladder above, putting a drainage tube in the rectum, with complete recovery.

I. A. Shirley, Winchester: I would like to report a case showing how patients with rectal injuries will recover. Some years ago I was called by another physician at night to see a little fellow who in the afternoon received quite a severe injury to the rectum, severing the sphincter, while he was somersalting in a cornfield. That night, with the aid of a lamp and kitchen table with a quarter of an inch of dirt on the floor, I sewed up the injury to the rectal wall with silk, brought the sphincter well together, and he recovered without a particle of trouble.

Another patient, a housewife, in my town had swallowed a fish bone and came to me in great distress with this large fish bone in her throat. I removed it, and the next day her husband came with a fish bone in his rectum, both from the same fish.

Bernard Asman, Louisville, (closing): I wish to thank those who have participated in the discussion of my paper. Dr. Clark referred to the importance of cleanliness in dealing with rectal wounds, and also to the fact that ordinarily the rectum is considered a "dirty place" in which to operate or to make an examination. I am glad he mentioned these points. While it was not my purpose in the paper to discuss in detail the various injuries which might occur about the rectum, and the best method of treatment applicable to each type, yet I am sure we cannot too often recall the fact that the rectum must be carefully examined whenever there is any indication whatever pointing to possible rectal disease or injury.

I do not understand why doctors consider rectal examinations disagreeable; I do not see why they should be so regarded. By using rubber gloves and plenty of soap and water, I have not found rectal examinations disagreeable. If preferred the patient may be allowed to go home and return for examination the following day after having taken a purgative or cleaning enema of soap suds; but I rarely resort to the latter plan because the air tight rubber glove affords sufficient protection. Moreover, it is better to examine the patient without any extensive preparation, because you then find discharges and evidences of disease within the rectum or anal canal, or about the external anal orifice, which would not be present if the patient had been especially prepared for the examination.

If the rectum is properly prepared for operation it can be made sufficiently clean to permit immediate suture of operative wounds when indicated in this region. I refer, of course, to the excision of fistulae, the removal of hemorrhoids, or any kind of rectal operation. If the rectum has been properly prepared prior to the operation, there should be no hesitation about the suturing of such wounds. Proper preparation consists of only a few simple measures. The patient at least twenty-four or better thirty-six hours prior to the time for operation is given a purgative; I give three to four tablespoonfuls of castor oil by preference, but other agents might answer the purpose just as well. The patient goes to the hospital the evening before or during the day preceding the time for operation. During that afternoon he is given one or more soap-suds enemas; one is sufficient if the water returns clear; if the water is intermixed with feces another enema must be given. Three hours before operation a final soap-suds enema is administered, the patient being instructed to expel all the water possible. Whatever remains in the rectal folds will be absorbed and you will have a clean field in which to operate.

If you are going to excise a fistulous tract which contains pus and pathogenic bacteria, an injection of carbolic acid into the tract should be given the day before the operation and be immediately followed by alcohol or other neutralizing agent; or, if preferred, iodine may be used. If the tract can be dissected away without being opened, as can be frequently done especially in old fistulae, there is no reason why the wound should not be closed by immediate suture, an "anal spool" inserted and thus protected against infection.

Rectal injuries from foreign bodies swallowed or introduced from without, open an extensive field for discussion, because such cases are frequently encountered. Bones of every description, fish-hooks, etc., have been found in the rectum, and if time permitted I could relate several very amusing experiences I have had. Some time ago a woman (a Christian Scientist) had a portion of the breast bone of a chicken lodged crosswise in her rectum. The edges of the bone were sharp and jagged and stuck into the tissue on either side of the sphincter. The patient complained

of no great pain but finally entered the hospital where the bone was removed.

Dr. Clark mentioned having found some rather peculiar foreign bodies in the rectum, such as bolts, nails, etc. Several years ago I reported a case of "bottle in the rectum." According to the history obtained at the time the patient thought he was suffering from hemorrhoids, and a fellow workman said he had a remedy which would cure him, and exhibited a Welch's grape juice bottle containing some brown liquid. Desiring to make the application at once the patient stooped over and inserted the neck of the bottle as far as he could into the rectum. When the medicine began to escape the patient suddenly jumped and the bottle slipped entirely within the rectum. In removing the bottle I had to divide the man's sphincter, and that is why I again mention the case, as it shows the possibility of repairing such wounds. The sphincter on each side had to be severed to allow introduction of my hand into the rectum, the bottle being then grasped and removed. When the patient came to me all I could feel was the large end of the bottle, it having been pushed far upward into the rectum by the family doctor in his attempts at removal. The incision on either side was repaired and an "anal spool" inserted. The patient had just as good a sphinter afterwards as he had before.

Tubercular abscesses about the rectum, as mentioned by Dr. Clark, are seen quite frequently and of course they sometimes cause a great deal of trouble. I do not hesitate to open an abscess in this region although it is clearly of tuberculous origin. It is said by many practitioners that we must not do any kind of an operation about the rectum if the patient is tuberculous. This merely represents an erroneous theory which has been handed down to us. I am thoroughly convinced that wherever pus exists, even although it may be of tuberculous origin, it should be promptly evacuated. Many tuberculous fistulae may be cured by operation.

Tuberculous Porphyry Spleen.—The diagnosis during life had been splenomegaly with probable lymphogranulomatosis, but necropsy failed to reveal any enlarged lymph glands and no foci were found in the liver, while the spleen showed advanced tuberculous changes and an aspect of the cut surface resembling that of porphyry. It had evidently become infected from an old latent apical focus. If it had been removed when first affected, the secondary liver and peritoneum tuberculous lesions might have been warded off. An exploratory puncture or incision might have cleared up the case in time. The patient was a man of 67.

THE IMPORTANCE OF ROUTINE VENEREAL EXAMINATION OF PEOPLE ADMITTED TO JAILS.*

By W. J. Young, Louisville.

This article is based on Wassermann findings and smears examined of inmates in Jefferson County Jail, Louisville, May 4th, 1918 to December 31st, 1918.

Number of cases examined:

Females	575		
Males	145		
Total cases	720		
Female syphilitic	173	30	%
Males syphilitic	40	27	%
Total females and males syphilitic	214	29	4-7%
Males with gonorrhea	33	22	%
Females with gonorrhea	104	18	2-23
Females having gonorrhea or syphilis	277	48	%
Males having gonorrhea or syphilis	73	50	%
Females having both gonorrhea and syphilis	163	28	1-3%
Males having both gonorrhea and syphilis	18	12	2-5%

The class of females examined were interned on charges of drunkenness, disorderly conduct, petit larceny and keeping disorderly house. This being a war-time measure with the idea of ascertaining how great a menace these women are to the soldiers in the local Cantonments, as well as civic populations. The men examined were those working in the kitchen of the jail, those giving a history of venereal disease or having suspected lesions and those picked up in raids on disorderly places.

In the first eight cases examined for kitchen help, five were found to have positive Wassermanns. The percentage is out of proportion of course, and I merely mention it to show the importance of venereal examination of those working in public kitchens or handling food. The percentage of positive Wassermanns may seem surprisingly high on both male and female, but when it is considered the walks of life these cases come from one would expect such a high rate.

TECHNIC OF WASSERMANN USED.

Practically that of the original Wassermann. Both amboceptor and complement are titrated immediately before each test, and at least two antigens used, one a cholesterinized.

*Read before the Jefferson County Medical Society.

alcoholic extract, the other a plain alcoholic extract. Controls are carried for each patient's serum, for each antigen in equal and double amounts of the dosage used, for amboceptor, complement, red blood cells and saline and on the entire set of tests with known positive and negative human sera.

In the examination of women for gonorrhea the routine procedure was, for the first hundred, to take two smears; one from the urethra and one from the vagina or cervix. Later four smears were taken, one from the vestibule of the vagina (Bartholin Glands, etc.), one from the urethra, one from the vagina and one from the cervix. These were not rechecked or cultures made, owing to amount of other work being done at that time, and will explain why positive findings are so low in gonorrhea. The men examined for gonorrhea were those showing uretheral discharge.

There being no law in Jefferson County or state of Kentucky, when the United States Public Health Service Venereal Clinic was established in the County Jail, by which blood tests or smears be compulsory, the consent of each of the first hundred was neeessary and obtained. This entailed quite a lot of unnecessary time in explanations and persuasion on the part of the one making the examination. The voluntary cases I have examined for the most part are willing to be examined, their great fear is that one of them will get out of it and often I had to get them all to agree to the examination before the first one was willing to submit. One of the strongest pleas I can put forth for routine examination is the bitter feeling that exists when one of their number is not required to go through the same procedure as the rest. One refusal in voluntary examinations makes it very hard for all concerned, as the case is sent back to their cell and become very important creating a feeling of discontent among those having been examined, and making it harder to gain the consent of subsequent cases.

In getting the venereal history of the woman, with a few exceptions, none gave any history of gonorrhea or syphilis, and were very much surprised and skeptical when told of their trouble. This is especially true of syphilis. The ignorance of these people as to the nature and complications of venereal diseases, as well as the amount of treatment necessary for clinical cure, is surprising, and the seriousness of venereal disease never seems to enter their heads. On careful macroscopic examination fully 85% of those having syphilis showed absence of lesions whereby the doctor could make positive diagnosis. These things further impress one thrown in contact with this class what a menace they become if allowed to roam at large, to the entire population in which they reside.

CONCLUSIONS.

1. The percentage of syphilis and gonorrhea is usually high among inmates of jails.

2. The ignorance of their condition, irregularity of treatment renders them a constant source of infection to the public.

3. That in the examination for gonorrhea four smears be taken, one from the vestibule of the vagina, one from the urethra, one from the vagina and one from the cervix, and if all these smears are found negative subsequent examinations made and cultures taken.

4. The inmates of jails be examined for syphilis and gonorrhea as a routine measure and laws be enacted so that examination and treatment be compulsory.

5. That if laws be made and enforced making it possible to examine for venereal disease and treat those diseased a decided step would be taken in lowering the infectiousness and percentage of syphilis and gonorrhea.

6. It is my belief from the above that compulsory laws should be made for the examination of venereal disease, not only in cities near and adjacent to cantonments but in all towns and cities and the treatment of those infected with venereal disease also made compulsory.

I am indebted to Dr. A. M. Barnett, jail physician of Jefferson county jail, for a large part of the data of cases. Dr. Barnett assumed complete charge of venereal work in the jail in July, and the success of the United States Public Health Clinic is wholly due to his untiring efforts.

The serological and bacteriological work was done under Dr. Stuart Graves of the University of Louisville.

Pituitary Polyuria.—In a case described there was variable polyuria, more pronounced at night. At times the output of urine measured more fluid than the woman had drunk during the twenty-four hours, but the food eaten did not seem to modify the total output, and the composition of the urine and the functioning of the kidneys seemed normal. The most interesting feature of the case was the constant subsidence of the polyuria when the patient was given the extract of the posterior lobe of the pituitary gland. The effect of this treatment is the touchstone which reveals the pituitary origin of the polyuria. In this case necropsy revealed eight gummatous lesions in the pituitary, mostly in the posterior lobe. The woman succumbed to progressive debility and dehydration.

AN UNUSUAL CASE OF AMEBIC COLITIS AND HEPATIC ABSCESS.*

By Henderina van de Erve, Louisville.

The following report is that of an unusual case of amebic colitis and hepatic abscess, unusual because of the excessive hemorrhage from the colon. The case came to autopsy December 2nd. 1918, and the post-mortem examination was made by Dr. Stuart Graves and Dr. van de Erve. An excerpt from the hospital chart sent to the laboratory with the autopsy permission is briefly as follows:

White, male, age 38; occupation, plumber. Admitted to Louisville City Hospital November 25th with a temperature of 98.6, pulse of of 120 and respirations 30. History: Health good until the middle of November when he noticed a pain in abdomen on right side. Stopped work nine days before admission because of this pain. Physical examination: Anemic. Nutrition good. Chief Complaint, hemorrhage from bowel which started day before admission at which time he passed large clots of dark red blood. He felt weak, but had lost little weight. Bowels had been irregular for past year with some diarrhea in October. Had drunk about a pint of whiskey and some beer every day for the last four years until six months ago. Had measles about twenty years ago and typhoid sixteen years ago. Mucous membranes pale. Teeth bad. Heart normal. Liver enlarged. Some resistance on right side. Notes from Nurse's record: 11-28-18 Temperature 98 degrees, pulse 104; respiration 26. 11-29-18, fainting spell with hemorrhage from bowels with large clots of blood in stool. Died 12-1-18. Provisional diagnosis, dysentery.

The post-mortem findings pertinent to the features under discussion were as follows:

Skin and mucous membranes pale and anemic. Abdomen tense and tympanitic.

Peritoneal cavity: Peritoneum everywhere is dull to bright red mottled with yellowish gray and adjacent surfaces are stuck together with a thick, fibrinous exudate. Approximately 500 c.c. of turbid fluid found in dependent portions. Between right lobe of liver and diaphragm and between quadrate and Spigelian lobes of liver and adjacent structures are fairly firm, fibrinous adhesions. When these are broken down thick, yellow pus escapes from abscesses of liver. Appendix shows some injection of peritoneum, but otherwise is not abnormal. Gall bladder covered with fibrinous exudate, but otherwise is not remarkable. Mesenteric nodes not enlarged. Diaphragm: Left, 4th space; right, 3rd space. Serosa of colon appears dark, purplish blue in thinner portions and in this dark field are scattered islands of pale gray.

Gastro-Intestinal: Stomach contains about two litres of greenish fluid with yellowish gray flocculi. Mucosa is pale, with dull red points and is covered with a small amount of mucus. Throughout the small intestine nothing is remarkable, lumen containing rather thin, greenish, foul fluid. Beginning immediately beyond ileo-caecal valve mucosa of colon throughout its entire length is studded with round, oval and irregular, raised, rounded thickenings of mucous membrane. Only smaller of these are not umbilicated and all of larger have depressed, ulcerated centers, ulcers extending into the sub-mucosa. Walls are yellowish gray and lacy in larger ones, but there is no marked undermining. In floors of larger ulcers are minute, punctuate hemorrhages. Largest of ulcers measures about 15x25 m.m. Lumen over ileo-caecal valve to anus contains dark blue, clotted blood which evidently springs from ulcers to colon.

Liver: Wt. 2450 gms. In situ a large portion of anterior surface of right lobe is covered with a thick, soft grayish, fibrinous exudate. This is most marked near right border and about midway between superior surface and inferior border. When fibrinous adhesions are broken down at this point finger enters an abscess cavity. Later this is found to be about 4 cm. in diameter, single, filled with soft, stringy, broken down material, beneath which is a ragged wall of dull red and gray. Cut surface shows an uneven, congested zone 5-15 mm. deep around this abscess. Below and at left of abscess is an island of thick, fibrinous exudate about 6 cm. in diameter. In removing liver two larger cavities are broken into: First is in dome of right lobe and is separated from right pleural cavity only by diaphragm. This cavity is similar to one just described, except that it is much larger, being about 12 cm. in greatest diameter. A third cavity occupies greater portion of quadrate and Spigelian lobes, measures 6 cm. in greatest diameter, is located in posterior portion and is separated from peritoneal cavity only by fibrinous adhesions. It is single and otherwise similar to the other two abscesses. Elsewhere cut surface of liver is not remarkable.

GROSS ANATOMICAL DIAGNOSES

General peritonitis,
Ulcerative colitis with hemorrhage,
Multiple abscesses of liver,
Cardiac hypertrophy,
Fibrous pleural adhesions, right,
Anemia,
Mucous gastritis.
Microscopic examination of sections of ul-

*Read before the Jefferson County Medical Society.

cers of colon and of abscesses of liver show typical ameba histolytica in midst of inflammatory exudate.

As before mentioned this case is remarkable because of the unusually large hemorrhage from the colon. In the literature read on the subject in no case is there mentioned the presence of blood in such large amounts. Osler found hemorrhage in only three cases. Other writers do not even mention the fact that it occurs.

Amebic dysentery, caused by the entameba histolytica, is a disease prevalent in India, Egypt and tropical countries and is endemic in some parts of the United States. Most cases are found in white male adults.

The organism, ameba histolytica, is often 15-20 micra in diameter with a clear outer zone and granular inner zone and contains a nucleus and one or two vacuoles. It is somewhat larger than the non-pathogenic, entameba coli. It is thought that it has a life cycle similar to the malarial parasite. The resistant forms, "encysted ameba" are somewhat analogous to the gamete form of the malarial parasite and are believed to be necessary, under certain conditions, for the transmission of disease from one person to another.

The ameba is taken in with drinking water, fresh vegetables and ice cream. It finds its way into the crypts of the mucosa of the colon and there produces small areas of necrosis. The colon is the only part of the intestine usually involved, although it is possible for the lower part of the ileum and the appendix to be affected. In early stages the mucosa appears elevated in spots, surrounded by hyperemia and with a central plug of necrotic tissue. Later when this plug drops out an ulcer is left. These ulcers are either round or oval, with, at times, smooth, but usually ragged edges. Generally the edges are undermined; frequently in severe cases there is nothing left but a network of bridges of mucosa. From the mucosa the organisms pass down into the sub-mucosa, the muscularis and the subserous layers of the intestine. Perforation seldom occurs, because the simultaneous repair which is going on, causing at times such heavy cicatricial bands as to result in a stricture of the gut at that point. When perforation does occur it is usually met with adhesions so that only local abscesses are produced. The amebae in their travels burrow their way under the endothelium of the branches of the portal vein and are even found in the lumen of the venules together with the blood-cells. This is important since it explains readily their transportation to the liver. Hepatic or tropical abscess is the most frequent sequel of amebic dysentery. In old abscesses the pus is found to be sterile. In the intestine the amebae take into their cytoplasm red blood cells and bacteria, so it is not surprising to find evidences of bacterial infection in the liver also. In one case staphylococcus aureus grew out on culture. However, the abscesses usually are sterile except for the amebae, which is probably due to the digestion of bacteria. Occasionally even the amebae are not found in the pus, especially of old cases, as it has been found in surgical cases that the pus escaping immediately after operation is sterile, but that which is formed in the next few days is alive with amebic. This is likely to be due to the fact that the ameba being aerobic, leave the dead tissue debris and enter the living cells in search for oxygen, again reappearing when the abscess cavity is open to the outside air. Ordinarily only one abscess is found but in about one-third of the cases they are multiple, two or three large cavities being found. Occasionally miliary foci are found when the amebae are scattered throughout the entire liver. Though generally a single cavity, it is often loculated, several original foci having united. Usually the abscess wall consists of disintegrating liver tissue, but in chronic cases may have a fibro-cicatricial wall which sometimes is as tough as leather. Healing does occur here as well as in the colon. The most common site of the abscess is in the dome of the the diaphragm into the lung, which is frequently adhesive with rupture into the bronchus. This is the most frequent and favorable outcome. Extension may also occur into the pleural cavity and pericardium, into the peritoneal cavity or adherent stomach and colon, or even through the outer skin, rarely into the vena cava or portal vein.

The symptoms in amebic dysentery vary greatly owing to the different forms found. In the mild form the patient may not become alarmed about his condition at all as he only has a little headache, feels weak and has occasional diarrhoea. This may be present for a month or two before any attention is paid to it. In the acute form the disease is more serious. The pain and tenesmus are severe, with frequent passages of stools, which show blood and mucus and at times large sloughs. Rapid emaciation and death may follow in a week. In the chronic form one finds alternating diarrhoea and constipation which may last for six months to a year. There is some pain and temperature, night sweats and passage of blood and mucus during an exacerbation.

The disease is easily diagnosed by the finding of the amebae in the stools. A differential count shows no marked increase of polynuclears. The prognosis is not very good. There is a great tendency to relapse. Death usually results. For the privilege of report-

ing this case and for helpful suggestions, I am indebted to Dr. Stuart Graves.

DISCUSSION:

E. S. Allen: Cases of amebic infection are quite often treated symptomatically, and an accurate diagnosis is not made. They are seen most frequently in the southern states and the symptomatology is similar to that recognized as due to chronic malaria. The patient loses weight, feels tired, malaise is marked, and there is no special symptomatology unless there is an acute exacerbation; and even then amebic infection may not be recognized. It is almost impossible to demonstrate the ameba unless the feces have been carefully preserved at an even temperature and are examined within a short time after being passed.

During the last year I saw a case of amebic abscess of the liver which ruptured into the bronchus and a large quantity of pus was expectorated. It was at first thought the patient had an abscess of the lung, and she was treated for tuberculosis for quite a while. The X-ray demonstrated a cone-shaped mass in the liver pointing toward the dome. On account of the pulmonary lesion surgical treatment was delayed. Finally under local anesthesia a rib was resected and drainage instituted, but even then we did not suspect an amebic abscess of the liver. Drainage continued for some time; the pus was examined and a smear made, but I do not now recall what bacteria were demonstrated. The patient did not improve and an examination was then made for the ameba which should have been done at first; we demonstrated ameba by the thousands. Under the administration of emetin the patient made what was considered a most miraculous recovery.

In obscure cases we should thoroughly examine the patient before making a diagnosis. In examining for the ameba it is best to obtain a specimen of feces directly from the rectum and microscopic examination should be made as soon as possible while the feces are warm.

Stuart Graves: The case reported is of unusual interest because of the persistent intestinal hemorrhage. Before death the patient passed a large amount of blood and several clots. At necropsy the lower intestine was found packed with fresh blood clots. I never saw a case in which the hemorrhage was so extensive.

In five hundred and ninety autopsies performed in the pathological department of the University of Louisville and the Louisville Public Hospital during the last four and a half years we have found only two cases of colitis with abscess of the liver due to the ameba histolytica. The first one was early in 1915, from the surgical service inthe hospital, the patient being operated upon by Dr. J. G. Sherrill for hepatic abscess. In that case the diagnosis was made ante-mortem.

In the case reported to-night the clinical diagnosis was dysentery, but the possibility of colitis due to the ameba hisolytica was considered. The post-mortem picture was not quite characteristic. Under the microscope some sections of the mucosa merely showed an extensive hyperplasia, but the majority showed ulcerations, a great many of the ulcers being typical. The patient had no elevation of temperature ante-mortem. The peritonitis was due to the escape of contents of the abscess which was located in the quadrate lobe of the liver. Another interesting feature was that the large abscess in the right lobe of the liver was separated from the pleural cavity by only a thin membrane.

C. H. Harris: In the case reported it is a sad commentary on the diagnostic ability of the hospital physicians that abscess of the liver was not recognized in the beginning. Hepatic abscess is characterized by rigors, sometimes severe; and in the majority of instances the abscess occupies the right lobe. That is supposed to be due to the fact that septic emboli gain entrance to the liver through the portal vein. If one will remember that hepatic abscess usually attacks the right lobe, that the liver is pushed outward and upward, that septic manifestations are pronounced, it seems to me there should be no difficulty in making the diagnosis. In hepatic abscess there is no increase in polymorphonuclear leucocytes, whereas the blood examination shows a marked leukocytosis in other forms of abscess.

H. E. Tuley: Referring to Dr. Harris' remarks which cast serious reflection upon the ability of the hospital physicians: I saw this patient myself on three or four different occasions, and there was never present a single symptom to lead one to suspect that he had an abscess of the liver. He did not have the characteristic pulse nor any other symptom of sepsis; he had no elevation of temperature. The only symptoms were abdominal pain and intestinal hemorrhage.

Japanese River Fever.—This first instalment of this report on extensive research on tsutsugamushi disease is accompanied by three colored plates and several other illustrations. The article is in German, and describes experiments on laboratory animals and monkeys with successful inoculation by means of infected mites. The Japanese word mushi means "**mite,**" and the present research has confirmed beyond question that the disease is contracted from the bite of a mite or acarus. From one to four of these mites were found on fifteen of twenty-six persons working on the river bank in the infested region. Some of them had disease in previous years, but others had showed no signs of it at any time, so that not all the mites are infected.

DRAINAGE IN SURGERY OF THE CHEST.*

By G. A. Hendon, Louisville.

The contemplation of this subject includes chiefly the treatment of accumulations of pus in the pleural cavity. Drainage in the newer surgery of the chest follows the regular principles of drainage under other circumstances. I might be excused for making a few general observations on the subject of drainage and its fundamental principles. It might be profitable to refresh our memory to the extent that certain physical forces are required to maintain a process of drainage. One of these is vis-a-tergo, force of gravity and capillary attraction. Unless one or two or all of these forces are active drainage can not be maintained. The purposes of drainage are to convey the products of infection to a safe distance from the absorbing surface of damaged tissue. Second, suspend the function of a hollow viscus; third, conduct morbid secretions to a safe distance from wounded structures.

To fulfill these functions the various measures that are adopted are as follows: For capillary attraction gauze mesh, for gravity patency of the wound is relied upon and when there is ample pressure from behind various kinds of tubes are employed. There are instances in which a combination of all three physical forces are resorted to. Drains should be left in position as long as the purpose for which they are placed is not fulfilled. As soon as fulfillment of the purpose is accomplished it is time to remove the drain. It should never be forgotten that anything that is used as a drain introduces into the wound a foreign body which is an insult to the tissue and a violation of the principles of wound repair. It is important, therefore, to either eliminate drainage from our standpoint of treatment or reduce it both in time and extent, to the lowest possible degree. Surgery will, therefore, have accomplished an important and useful achievement when the introduction of foreign bodies into the wounds for the purpose of drainage shall have been abandoned. All surgeons recognize the force of this idea and direct their efforts toward its realization more and more as their work develops. The means adopted for the accomplishment of drainage in a general way are careful haemostasis, accurate approximation and perfected asepsis. When these three objects are arranged the necessity for drainage no longer exists. They may be accomplished first, by careful ligation of blood vessels; second, obliteration of dead spaces with the use of buried sutures and surgical cleanliness in the superlative degree. The first of these requirements is the easiest, the third is possible if contamination has not preceded the surgeon. The second (the obliteration of dead space) is the only one of the three which seems at the present time to be beyond the range of surgical possibility and occupies the most important consideration in chest surgery. To avoid the necessity of using a foreign body for the drainage of a space that can not be obliterated the following measures may be adopted: First, occupying the space by a medium in which the micro-organisms will not grow. It is a principle in physics that no two bodies of matter can occupy the same space at the same time. Therefore, if a space be occupied by a medium in which organisms cannot grow it is not possible for that space to be occupied by wound secretions or the products of infection in which organisms are known to thrive. Therefore, it has been lately the custom and practice of the best surgeons to utilize such materials as have been furnished by the chemists of physiological laboratories to fill up their dead spaces thereby eliminating the necessity of drainage. If contamination has preceded the surgeon and there is already a dead space the pleural cavity furnishes an excellent example, filled with the products of suppuration it becomes necessary to provide only for the evacuation of the contents of the space and occupy its space with some medium which is antiseptic in character as well as harmless to the individual. Or by using antiseptic material to render the septic matter innocuous and allow it remain as a space filler. When it is thought best to evacuate the contents of the pleural cavity this is best done by aspiration. If the contents are too thick to be pumped through the aspirating needle they may be liquified by injecting a few ounces of Dakin's solution or some alkali. After the cavity is evacuated it should then be filled with Dakin's solution and the aspiration wound sealed. If it is thought best three or four drachms of a two per cent formalin solution in glycerine may be injected into the cavity every other day until the signs of infection, such as chills and high temperature, have disappeared. I believe that these methods of treatment are going to supplant the older operations of extensive thoracotomy in purulent accumulations in the chest. It is always a melancholy chapter in our former chest surgery to have a patient go about a year or two after a rib re-section wearing a tube and discharging pus at every cycle of respiration. The other operation for removing large areas of the chest wall to produce a

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

cavity results in a deformity which makes them very unattractive.

The substance of this paper upon the subject of drainage, therefore is to encourage efforts to eliminate drainage.

PROSTATIC OPERATIONS; REPORT OF CASES.*

By J. Hunter Peak, Louisville.

Enlarged prostates have existed since men began to be old; at least the oldest literature gives us beautiful delineations of what used to be called "old man's bladder," but which we now know to be due to neoplasms of the prostate gland.

It is not the object of this report to present minute details concerning the development of prostatic tumors and their sequelae; but it is my opinion that nearly all of them in men past forty-five years of age are due to fibrosis superinduced by some form of constant irritation. It has been noted that in 50 per cent of cases the patient gives a history of Neisserian infection in early life; in the remainder cystitis was the first symptom noticed antedating prostatic enlargement and even before there was any interference with micturition, and I do not believe was due to residual urine from prostatic enlargement. Enlarged prostates due to neoplasms in young men are nearly always malignant in character.

In operating for prostatic enlargement there are two recognized methods of approach, viz., the suprapubic and the perineal. The surgeon is prone to follow the one most familiar to him. There are good reasons for the adoption of each route when occasions require If the patient is thin, the suprapubic route is best, the operative steps being executed after the manner so beautifully described and illustrated by John B. Deaver; if the patient is very fat and has a thick pendulous abdomen, the perineal method as described by Hugh H. Young is by far preferable. All things being equal, in my opinion the suprapubic route is the best. If a sound is introduced into the bladder and the handle depressed between the patient's thighs, the perineum forms the fulcrum of a lever which lifts the prostate away from the rectum, hold it well against the pubic arch, and acts as a guide to help protect the urethra; this makes the prostate easy of access and it is held perfectly still during the process of enucleation.

When operating through the perineum Young's retractor answers the same purpose as the sound used in the suprapubic method. I believe hemorrhage can be equally well controlled either way by gauze packing, which must protrude from the incision so it can be removed in two or three days after the operation when not further needed. Continuous saline irrigation will help control hemorrhage and keep the bladder free of clots, which is a very important factor in the after treatment. This procedure should be continued usually for about twelve hours when the water will return clear, then it should be repeated every every three or four hours just in sufficient amount to demonstrate that the drainage tubes are patent. This irrigation may be maintained by a catheter placed in the urethra before the wound is packed and closed, and a large drainage tube in the bladder reaching over the edge of the bed to a proper receptacle; then let the normal saline pass through the catheter, and the drainage tube will "siphon off" the bladder contents satisfactorily. This procedure ought to be continued until the drainage tubes are removed at the end of the first week.

CASE REPORTS

Case 1. Mr. K., aged seventy-seven, height six feet, weight one hundred and forty-five pounds. There was an early "gonorrheal" history; otherwise the patient was an unusually well preserved man both physically and mentally. When seventy-four years of age he noticed difficulty in voiding his urine; the stream became smaller gradually and the residual urine larger in amount until he reached the age of seventy-six. During the next year his bladder was never empty, and he had what might be termed a constant dribbling or overflow. On January 3rd, 1918, he had complete retention of urine with prostate so large and urethra so tortuous that a catheter could not be inserted.

The patient was taken to the Sts. Mary and Elizabeth Hospital where an immediate prostatectomy was performed. The median and right lobes were about the size of English walnuts; the left lateral lobe was as large as a hen's egg and acted as a valve which prevents emptying of the bladder and also the insertion of a catheter. The period of recovery was rather protracted but uneventful; the patient now past seventy-eight, is in perfect health and weighs over two hundred pounds.

The foregoing is the type of case some operators think should have had the double operation; that is, first draining the bladder suprapubically, and when the patient was in better physical health enlarging the suprapubic wound and removing the prostate. I believe in many cases where the kidneys are badly crippled from back pressure this might be the

*Clinical report read before the Jefferson County Medical Society, January 20, 1919.

best method of procedure, but am inclined to the opinion that the prostate can be so quickly removed that the risk is not much increased by the one-stage operation.

Case 2. Mr. F. C., aged fifty-five, height five feet and ten inches, weight two hundred and twenty-five pounds. This patient had acute urinary retention; the catheter could be introduced, but the cystoscope revealed an enlarged middle lobe with a pedicle acting as a ball valve.

The perineal route was chosen in this case and Young's technique employed the enlarged middle lobe being removed. The other two lobes being normal were not disturbed. There was practically no hemorrhage, and all drainage excepting the retained catheter was removed within forty-eight hours. The patient was discharged well at the end of ten days.

Case 3. Judge C., aged seventy, height six feet, weight one hundred and fifty pounds. Normal urination had been impossible, there being simply an overflow, but the catheter could not be used. Examination disclosed the bladder filled with pus and urine. Dr. A. W. Nickell kept this patient in the hospital four weeks irrigating the bladder and giving special attention to the crippled kidneys and existing cystitis until he was much improved in health. This could be done because he could be catheterized.

This man's prostate was nearly as large as a goose egg, that is the three lobes combined. The middle and right lobes were removed, enucleation being easy; the left lobe was nothing more than an abscess. The patient remained in the hospital four weeks after the operation and made an uninterrupted recovery.

I have refrained from saying anything concerning the very important medical side of these cases, because Dr. Nickell is present and I hope he will do that for us in the discussion.

Case 4. Mr. M., aged eighteen, height five feet six inches, weight one hundred and twenty-five pounds. There was no "gonorrheal" history nor anything else of importance until a few weeks before Dr. McClure, of Bardstown, Kentucky, brought the patient to Louisville. There was retention of urine, but the catheter could be used and the patient had been catheterized with sufficient frequency to limit trouble incident to residual urine during the short time symptoms had been present.

Suprapubic operation; the prostate was about the size of a hen's egg, enucleation easy; hemorrhage was very considerable, but was controlled in the usual way. The wound followed the usual course of healing until only a small sinus remained. The patient left the hospital in three weeks with the sinus discharging normal urine, and there was no further hemorrhage while in the hospital. Alvine evacuations were free and regular at all times.

Dr. McClure reports that soon after the patient reached home he had repeated rectal hemorrhages,—I suppose from recurrence of the neoplasm in the rectal wall. The suprapubic wound never entirely healed, and fine crusts or concretions were occasionally discharged through the small sinus which remained. The patient died eight weeks after being operated upon. The family physician is sure death occurred from recurring malignancy.

Dr. Stuart Graves made a microscopic examination of the prostate tumor in this case, and I hope he will tell us something about it in the discussion.

DISCUSSION:

A. W. Nickell: There is an important and distinct medical side to the majority of cases of prostatic disease. The patient has usually led a catheter life for two or three years before applying for surgical treatment; infection of the urinary apparatus has occurred; the patient suffers from bacteremia; the digestion has become seriously impaired; anorexia and emaciation have supervened; and it is then incumbent upon the internist to institute treatment which will improve the patient's physical condition and make him a more favorable subject for anesthesia and at the same time enable him to successfully withstand the necessary surgical procedure.

When the Judge, aged seventy, mentioned by Dr. Peak, came to me he gave the history that he had been catheterizing himself for about three years. Examination revealed a badly infected urinary bladder, which was a veritable manufacturing plant for the bacteria of mixed infection, especially the staphylococcus and colon bacillus; there was evidence of serious interference with kidney function; the patient was septic; the urine contained albumin probably due to the pus which was present; his appetite was meager; he had a low hemoglobin percentage and blood cell count. I kept him in the hospital for four weeks, and under vesical irrigations, supportive, eliminative and restorative treatment with autogenous vaccine his appetite and digestion improved, he gained several pounds in weight, and finally his condition was such that I thought he could be could be successfully operated upon. Dr. Peak performed a brilliant operation, and the patient made an uneventful recovery.

J. R. Wathen: With permission of the society I would like to exhibit some rubber devices, and speak of the technique I now follow in the performance of prostatectomy, and which I have found of greatest value. The first is the improved so-called umbrella or DePesser catheter used for suprapubic drainage in the preliminary step

of the two-stage operation, which I believe should always be performed in this class of cases. In addition to the preliminary or preparatory treatment, the control of hemorrhage and prevention of infection during the operation are most important features. Unless hemorrhage during operation is controlled and infection prevented a satisfactory outcome cannot be expected. The only tube which I have found of any value in suprapubic prostatectomy is the Freyer tube which I show you. For the control of hemorrhage there is nothing equal to the Hagner bag which may be allowed to remain in situ for twelve hours if necessary. If this is done there should not be the least hemorrhage. After the Freyer tube is removed suitable provision must be made for further drainage. I have given all the methods of securing drainage a thorough trial, and the Davis apparatus of Johns Hopkins Hospital seems the best. The tubes which I show you are attached to and facilitate the work of the Davis apparatus. They can be kept clean and dry and in this way are of advantage in preventing infection. If we can control hemorrhage and avoid infection we have the key to the situation. After closing the external wound a large sheet of thin gutta percha is placed over the Freyer tube and folded upon itself which keeps the wound perfectly dry.

With this improved technique there should be little or no mortality from suprapubic prostatectomy performed in two- stages.

Stuart Graves:. In the last case reported by Dr. Peak, the boy of eighteen, histological examination demonstrated that the prostatic tumor was a very rapidly growing fibro-sarcoma. Just before coming to the meeting tonight I examined half a dozen text books on surgery and pathology and could find no mention of sarcoma of the prostate gland; and the records of forty prostatic tumors examined in the Pathologic Laboratory of the University of Louisville show no other case of fibro-sarcoma.

As Dr. Peak has intimated, the patient probably died from a recurrence of the malignant growth.

E. S. Allen:. In the majority of cases of prostatic enlargement I have seen infection had already occurred, and the vitality of the patient had been considerably reduced in consequence; and usually the functionating capacity of the kidney was found very much impaired.

I prefer the two-stage operation. Preliminary suprapubic cystotomy is performed under local anesthesia for the purpose of drainage; the patient's vital resistance is then increased by appropriate methods of treatmnet, and free elimination secured through the kidney. It is remarkable how quickly the patient improves under rest in bed, proper medication and drainage. Very frequently at the end of ten days or two weeks the prostate may be removed with a much greater measure of safety.

M. Casper: Malignant disease of the prostate in a boy of eighteen must be exceedingly rare and might be readily overlooked. The physician who referred the patient to Dr. Peak is to be congratulated in making an accurate diagnosis.

I have performed the two-stage operation on several occasions with most excellent results. In lieu of suprapubic drainage, however, I have simply used a retention catheter introduced through the urethra. I discovered the value of this procedure by accident in a case operated upon two years ago. The suprapubic tube became dislodged on account of the restlessness of the patient, and could not be re-introduced without an anesthetic. The patient was a very nervous individual and a poor surgical risk from every standpoint. A catheter was inserted through the urethra and drainage maintained in that way. Radical operation was later performed with a satisfactory result. I noticed that Judd and several others are now using the urethral method of preliminary drainage almost exclusively. Tolerance is soon established and the catheter causes no trouble. In badly infected longstanding cases the bladder walls are very thick, and infection involves not only the mucosa but perhaps also the deeper tissues of the bladder walls. In these cases drainage is a very important factor.

I think a functional test of the kidneys should be made in all prostatic cases. This will often furnish a reliable guide as to the advisability of executing any operative procedure.

The rubber tubes Dr. Wathen has shown are not new and I formerly used them; but I have lately employed the button-hole suture in the prostatic capsule to control hemorrhage which has proved entirely satisfactory.

C. G. Hoffman: If cystoscopy had been practiced in the last case reported by Dr. Peak, the malignant character of the prostatic tumor would most likely have been discovered and he probably would not have operated upon the patient. Malignant disease of the prostate must be unusual under the age of twenty.

The two-stage operation should be given preference because of the existing infection, the urinary obstruction, possible kidney involvement, and the absolute necessity for preliminary drainage. Experience has shown that in the one-stage operation the sudden release of vesical pressure may cause collapse, and it has also been shown that uremia is much more common than following the two-stage procedure.

I believe it is always advisable to secure adequate drainage through a suprapubic opening in prostatic cases as a preliminary measure. It is usually found impossible to introduce a catheter through the urethra and maintain drainage in that way for a sufficient length of time. When the prostatic tumor is removed after suprapubic

drainage it is only necessary to enlarge the cystotomy-opening.

As to the importance of making a functional test of the kidney: I believe little emphasis is now placed upon the necessity of phenolsulphonphthalein test in prostatic cases. Personal experience has many times demonstrated that there may be a high phthalein output for two hours with a low percentage of blood urea, and vice versa. I remember a case recently seen in which the phthalein output for two hours was twelve per cent with the blood urea normal. The patient was operated upon and made an uneventful recovery.

J. H. Peak, (closing): Cystoscopic examination was impossible in the last case reported at the time the patient came under my observation. However, I believe I would have operated just the same had I known in advance that the patient had malignant disease of the prostate.

I am glad Dr. Wathen exhibited some of the accessories used in operative work on the prostate. The mechanical devices are all very nice, but I have found nothing better than an ordinary rubber tube large enough to secure free drainage. Even should the tube be extruded within a few days there is little danger of urinary extravasation into the surrounding tissues provided the tube has been properly applied.

Whether to perform a two-stage operation or a one-stage operation is a question which must be decided by the surgeon after studying the condition of the individual patient at the time. I can see no good reason for doing a preliminary suprapubic cystotomy provided a catheter can be introduced through the urethra; but in some instances the prostate is so large that introduction of a catheter is impossible; sometimes one lobe is found much larger than the others, thus causing such urethral tortuosity as to prevent the use of a catheter. In such cases suprapubic drainage must be practiced, and when used the tube should be placed as low as possible to secure the best results. Urinary leakage into the surrounding tissues can be prevented by careful suture of the vesical and abdominal wall. For this purpose I use what is known as the "lock stitch" and in no instance has leakage occurred.

Infant Mortality and Welfare.—The infant mortality rate is considered the most sensitive index we possess to social welfare. It reflects at once conditions which improve or interfere with the normal health of life of the community life. As conditions which make for normal family and community life are improved, the infant death rate decreases. When these conditions are disturbed, the rate, therefore, may be taken as the barometer of the social welfare of the community.—Handbook of Child Hygiene, Kansas State Board of Health.

SOME OCULAR COMPLICATIONS OF INFECTIOUS DISEASES.*

By Samuel G. Dabney, Louisville.

Neither syphilis nor gonorrhea is included in this paper.

Smallpox: It is sufficient to state that before vaccination 35 pe rcent of blindness was attributed to this disease.

Typhoid Fever: Complications are not common in the eye but may be very important. Corneal ulcers and paralysis of ocular muscles, as well as purulent choroiditis and various other intra-ocular inflammations are sometimes observed.

The corneal ulcer requires the usual treatment: atropine, hot fomentations for twenty minutes in every two hours, and perhaps closing the eye with a light dressing—the cautery or iodine to be used if ulcer becomes purulent.

Purulent choriditis is rarely diagnosed in the beginning. Pain is not marked and at first, external symptoms may be absent and the impaired vision may not be observed if confined to one eye. Later there is a yellowish appearance in the pupil, the eye-ball looks inflamed and often there is swelling of the lids and conjunctiva with pain. Treatment is unsatisfactory. Prognosis as to vision is almost hopeless and what is especially important prognosis as to life is serious even when only one eye is involved and almost though not quite, hopeless when both eyes are affected—the mortality according to Arnold Knapp being 83 and 33 per cent. respectively.

The chief symptom of paralysis of the extra ocular muscles is double sight. The eyes may also appear crossed as they are moved in certain directions. According to some authors the paralysis indicates a brain complication, but it is not a very dangerous omen as the patient often recovers with or without a disappearance of the paralysis. Two cases will illustrate these complications: I was asked to see a man in the thirties in about the third week of typhoid. He was evidently very ill. The lids and conjunctiva of one eye were swollen, the pupil yellowish and the sight lost. The patient recovered, the other eye remaining good and the affected eye remaining blind and becoming slightly shrunken.

Some years ago I was called because he complained of seeing double, to see a youth of 17 with typhoid fever. He had paralysis of the left external rectus. As there were no other cerebral symptoms I gave a favorable prognosis. He has lately been under my care for

*Clinical Report before the Louisville Medico-Chirurgical Society, December 13th, 1918.

ether conditions and tells me that his double sight disappeared some weeks after he recovered from typhoid.

Vaccination: Rarely the eye is directly infected with the vaccine. Ulcers form on the lids, there is conjunctivitis, swelling of the preauricular gland and sometimes involvement of the cornea. I have seen one such case in consultation with the late Dr. T. C. Evans.

Scarlet Fever: Here direct ocular complications are very rare but the consequent nephritis often shows itself by an oedema of the lid; moreover it is especially this form of nephritis which is one of the most frequent causes of uremic amarosis. This comes on three or four weeks after the eruption. The blindness is bilateral, absolute, usually sudden in onset and of a few days duration. Headache, vomiting, convulsions and stupor, one or all are generally present. I have seen this group of symptoms follow mastoid disease after scarlet fever and a diagnosis of meningitis may be made. In addition to the urinalysis the spinal fluid shonld be examined.

Measles. The initial conjunctivitis is well known. Other complications occur as sequelae. Of these the most common is phlytenular or eczematous ophthalmia. There is a growing tendency to regard this disease as tubercular, but so far as my studies go, treatment for it—essentially good food, good air and good surronndings with yellow oxide of mercury and calomel locally and atropine if there is much irritation—has not changed.

(Parenthetically I may say that is not true of certain intraocular inflammations in which the long continued use of tuberculin is of great value.)

Muscular insufficiency after measles I have seen several times. Most of the cases have recovered in a few weeks or months, but one is now under my observation which has changed very little in two or three years: both convergence and accommodation being much below normal. In measles as in various other infections we may, though very rarely, have purulent choroiditis affecting one or both eyes. Years ago I saw a medical student just graduated with the highest honors become totally blind in this way.

Diphtheria: A conjunctivitis due to the bacilli is very rarely observed. It is usnally primary and the naso pharynx may be secondarily involved. Far more common is ocular paralysis, generally affecting the ciliary muscle only, the pupil being unaffected. Sometimes the external rectus is also involved when there will be double sight. The condition is observed only on attempting to read or do other close work. It is due to toxins and occurs several weeks after the disease. The weakness of accommodation is bilateral. The prognosis is good. The treatment, time and tonics. It is noteworthy that this complication is as likely to follow mild as severe cases of diphtheria—in my own experience, more so. Sometimes there is a paralysis of the palate at the same time.

Mumps: In this disease inflammation of the lachrymal gland is occasionally seen, usually following soon after parotiditis. In rare cases inflammation of the optic nerve follows mumps, much less often than of the auditory. It may be mild and recover or severe and be followed by atrophy.

Influenza: Ocular complications or sequelæ have been far less common in recent epidemics than they were many years ago. This fall, however, I have seen four cases of corneal ulcer follow some weeks after influenza. They have all been superficial and marginal, except one which was over the pupil and will probably leave a scar slightly blurring the vision. Knapp says these corneal ulcers occur from the third to the seventh day of the disease, but the cases I have seen have been much later.

Conjunctivitis is said to be common, but mild in the onset. Paralysis of ocular muscles, iritis and optic neuritis have been observed after grippe.

Tuberculosis: Ocular tuberculosis is too big a subject and still too much under discussion to permit more than a brief reference to it here. A generation ago tubercles of the choroid in acute miliary tuberculosis was the only known ocular manifestation and was regarded as of great diagnostic value. As a matter of fact, however, these tubercles became evident as a rule only so short a time before death that their diagnostic value is not great. They are said to be far more common now that examination is facilitated by the electric ophthalmoscope than was formerly thought. Since the use of tuberculin a large variety of eye diseases have been attributed to tuberculosis.

Essentially the diagnosis must be based on the clinical picture, the absence of other causes such as syphilis and focal infection, and the reaction to tuberculin. The tendency to relapse—equally true whether sclera, cornea, iris, choroid or retina is involved. It is essential to exclude lues by a blood test and other means and to examine into the causes of focal infection.

The tuberculin may be given by the Von Pirquet method, but is far more valuable hypodermically. The reaction may be local (in the arm), general (pulse, temperature, etc.),

or focal in the eye. Very close observation of the patient and minute examination of the eye is necessary, as the ocular changes following its use may be and should be very slight.

As a rule ocular tuberculosis occurs in those who have no discoverable pulmonary or other symptoms, yet it is believed to be nearly always secondary.

Tuberculin is an important addition to ocular therapeutics. Arnold Knapp has found it of most value in inflammations of the sclera and retina, but I have seen excellent results from its long continued use in that inflammation involving the iris, ciliary body and choroid, called uveitis which we have heretofore regarded with very great concern. It appears to me wise that the tuberculin should be administered by a general physician who should supervise the patient and that the oculist should determine its effect on the eye, the two working in co-operation.

DISCUSSION:

C. Thompson: The nerves supplying the ocular muscles are very small, and in basilar meningitis pressure of the exudate upon these minute nerves probably accounts for some of the local paralyses described by Dr. Dabney. This is true of the ocular paralysis in syphilis, tuberculous meningitis, and in typhoid fever. Meningitis is a fairly frequent complication of many of the infectious diseases, and this probably accounts for the local paralysis.

B. C. Frazier: I have seen several children who following severe falls had paralysis of some of the ocular nerves with double vision which only lasted a short time. I recall one little boy in particular who was referred to the late Dr. J. M. Ray for treatment. The symptoms disappeared within a few days. I do not know whether the eye manifestations were due to hemorrhage or to exudation.

In closing I wish Dr. Dabney would tell us something about the cause of the eye symptoms in cases of this kind.

S. G. Dabney, (closing): The point made by Dr. Thompson is probably correct. In one of the cases mentioned in the paper there were eye complications following measles. The patient is a healthy-looking girl of seventeen who was for a time under the care of the late Dr. J. M. Ray; she then came to me, and later went to New York to consult a prominent specialist, but she has not improved very much under any kind of treatment. She had had a decided lack of accomodation and weakness of the internal recti for about three years.

I have seen several cases of double vision following falls as mentioned by Dr. Frazier. The entire absence of other brain symptoms in such cases would suggest slight muscular bruising as the cause of the double vision. In my experience the external recti have usually been involved. I do not believe there is actually a nerve paralysis in such cases; the absence of other symptoms would indicate peripheral injury involving either the muscle or the adducens nerve. The most of these traumatic paralyses recover.

The use of tuberculin in eye diseases is of some interest because this is one of the few locations where the focal reaction can be plainly observed. The injection of tuberculin shows its effect upon the vitreous, and the changes produced in the sclera and cornea are also significant.

I have under treatment now a young lady who came to me with serious disease of the interior of the eye; the vitreous body was hazy and vision was reduced to light perception. In this case I have tried every known remedy without appreciable benefit. The Wassermann blood reaction was negative. Her tonsils were slightly diseased and were removed some time ago with the idea that they might be the source of the focal infection, but no improvement resulted. Notwithstanding the absence of any specific history I recommended the administration of potassium iodide and mercury, and these drugs were given without benefit. I then tried tuberculin, the test was positive, and she has been given injections of this agent at intervals for a year. Her sight has increased from light perception to about 20-100; and while this is not perfect she has fairly useful vision.

Speaking of focal infections and the importance of excluding them in eye diseases: the most dramatic recovery from ocular disease that I have ever seen following the extraction of a diseased tooth. A woman who came to me had several scars about her neck, evidently the result of what we used to call "strumous" glands. She also had typical scleral and corneal lesions which we formerly recognized as being rheumatic in origin. However, treatment for rheumatism has been unsatisfactory. I expected to try tuberculin in this case, but the patient wanted to see Dr. Yager (dentist) about a diseased tooth before anything else was done. He telephoned me asking what effect I thought extracting her tooth would have on the eye disease. I told him the possibility of ocular inflammation being caused by a diseased tooth seemed to be so remote that I could not advise extraction for that purpose. However, the tooth was extracted and within four days the eye was well. It was the most dramatic case I have even seen.

Fracture of the Scaphoid Bone Without Displacement.—Nothing but the roentgen rays would have allowed the discovery of this fissure in the bone, and only by profile radiograms of the painful and the sound foot. It is indispensable also to apply roentgenography early, before time has modified the aspect of the fissure.

"BLUE CORNEA:" INHERITED SYPHILIS: MOTOR-OCULI PARALYSIS: CASE REPORTS.*

By Samuel G. Dabney, Louisville.

Case 1. The first case may interest those of you who practice obstetrics. It is the first baby I have ever seen born with blue cornea. Both cornea were blue one more so than the other. The usual explanation given for this phenomenon is contusion of the cornea during delivery. In this instance I asked whether the child had been delivered with forceps and received a negative reply. I gave a favorable prognosis.

It has now been two months since the child came under my observation and the blueness has entirely disappeared in one eye not so completely in the other. The cornea of the worse eye appears slightly staphylomatous the other has the normal curve. The only explanation given by text books is corneal contusion caused by forceps delivery. In this case, however, the child was born with blue cornea and was not delivered with forceps. Such cases must be very rare.

Case 2. The second case is also of interest to the general physician. A baby was brought to me when five weeks old. The mother was a buxom healthy looking woman about thirty years of age, who stated that the baby had considerable difficulty in breathing which interfered with nursing. Examination showed some small sores about the corners of the month, lips, and anus. The child did not, however, otherwise have the appearance of inherited syphilis. It looked rosy and the mother said it had gained in weight. We know that most children with inherited syphilis present a peculiar old and weakened appearance. I asked the mother how many children she had, and she replied this was the first one to live although she had borne six!

I generally prescribe some simple local measures in cases of this kind; a few drops of an essential oil, such as peppermint or eucalyptol in oil of vaseline will keep the nose open and facilitate nursing. Of course the treatment is essentially specific and I leave that to the family physician. I telephoned him I thought this was unquestionably a case of inherited syphilis. He did not seem to have thought of that before although I believe he attended the woman in all her miscarriages. He gave the child mercurial inunctions and rapid improvement has occurred.

Two or three questions present themselves in a case of this kind. What will a Wassermann test show in the mother? I believe it will be positive. The family physician will have this test made and if positive the mother will be treated accordingly. I thought the case of interest because of the slight evidence of inherited syphilis presented. In the absence of the so-called snuffles no one would have paid much attention to the small sores about the mouth, lips and anal region.

Case 3. The third patient is a male of forty-two apparently in perfect health, who came to see me a week ago with a dropped lid, and when the lid was raised he saw double in that eye. The pupil was not dilated, there was no paralysis of accommodation, he could still read fine print. In other words, the paralysis involved only certain fibers of the motor-oculi nerve. The statement has been made that over sixty per cent of such cases are syphilitic.

An interesting part of the history is that on two other occasions this patient has had dropped lid and double vision which disappeared within a week or two without any special treatment. The history is typical of so-called recurring ophthalmoplegic migraine without the migraine. Such cases are rare but are occasionally observed, i.e., paralysis of the motor-oculi nerve with violent pain recurring over a long period of time.

This patient has had motor-oculi paralysis reeurring the third time; he has a negative blood Wassermann, and is apparently in perfect health. No roentgenographic examination has been made, but on trans-illumination the sinuses appear normal and there are no other nerve symptoms. I suggested that he consult a neurologist, but he has not done so. He says the symptoms have disappeared on two previous occasions without treatment. Recurring motor-oculi paralysis without assignable cause must be rather rare.

*Clinical Report before the Louisville Medico-Chirurgical Society, December 13th, 1918

Roentgen Localization of Foreign Bodies.—Soresi fastens the limb to be examined in a frame to hold it immovable, as shown in illustrations. Very useful is a little device with blades and handles like forceps. One blade terminates in a lead ring, the other blade in a small pad which is dipped in ink. When the hand releases the upper handle the pad drops in the center of the lead ring. This marks the spot on the skin as the foreign body is seen with the rays and centered in the lead ring. By examining from different points and marking the spot casting a shadow, the foreign body is located with precision without any calculations, etc.

AMEBIC ULCER OF COLON AND ABSCESS OF LIVER; DUODENAL PERFORATION; REPORT OF TWO FATAL CASES.*

By Henry Enos Tuley, Louisville.

I have recently had the opportunity of seeing two most interesting fatal cases in the Louisville City Hospital, report of which I believe will be interesting from a clinical standpoint. Necessarily at the hospital we oftentimes see the end results, and in many instances it is most difficult to make a clinical diagnosis. Both of the cases to be reported belong to that class.

Case 1. The first patient was admitted with an indefinite history and the man was evidently much below par mentally. The most pronounced symptom was frequent and profuse intestinal hemorrhage. I saw several of the bed pans myself and they were filled with blood clots; there was but little free fluid blood.

The patient was in the hospital six days. during this time his temperature was normal; his abdomen was flat; he complained of no pain excepting in the right hypochondrium; anorexia was marked; more or less stupor was constantly present; his pulse was weak throughout and he finally died. We were unable to make a clinical diagnosis other than dysentery. I may say, however, that the margin of the liver extended four fingers-breadths below the border of the rib and there was some tenderness in that region. About the only way he could be roused was by palpation over that area.

The autopsy revealed multiple abscesses of the liver and extensive ulceration of the colon from the cecum to the rectum which I believe was amebic in origin.

Case 2. The second patient was admitted to the hospital a few days later and remained there twenty-four hours, just long enough to be a coroner's case. He was in extremis when admitted, with cold clammy perspiration, and a history of having been ill for three weeks without medical attention. He complained of excruciating pain in the upper abdomen which was tremendously distended and tympanitic. He died without our being able to induce an alvine evacuation and vomited only once. The diagnosis in this case was "an acute surgical condition of the upper abdomen with everything pointing toward acute peritonitis, and possibly perforation of stomach or duodenum.

I have never seen an abdomen opened at autopsy which contained as much fluid and pus, as was present in this case. Finally after dissecting through extensive adhesions in the upper abdomen there was found perforation by a small ulcer in the upper part of the duodenum with a larger ulcer near it.

Without an autopsy a diagnosis would have been impossible in either of these cases. Occurring so close together and both such acute cases they were extremely interesting to me from a clinical standpoint.

DISCUSSION:

B. C. Frazier: The most impressive feature of the two cases reported is that people may be seriously ill for weeks before subjecting themselves to medical observation. The short duration of the life of the two patients after admission to the hospital was unusual, but occasionally such dramatic things are observed.

In this connection I recall the case of an old lady who died several years ago. I was asked to see her in consultation a day or two before she died, and the attending physician had seen her only once or twice. Our first impression was that she had died of chronic cardiac disease. However, just before death occurred she vomited a large quantity of blood, and we then thought there had been rupture of the thoracic aneurysm. Autopsy revealed a carcinoma of the stomach which started on the serous side and finally perforated the mucosa.

The presence of the gastric cancer in this case remained unrecognized during life because the patient had not consulted anyone.

Stuart Graves: Since July 5th, 1914, when we opened the Pathologic Laboratory in the Louisville City Hospital we have made about seven hundred autopsies and in this number have encountered liver abscesses due to the ameba histolytica only twice.

The first case was in 1915, the patient being in the surgical service of Dr. J. G. Sherrill. Liver abscess, probably due to the ameba histolytica was diagnosed clinically; the ameba were demonstrated in the feces ante-mortem. Dr. Sherrill operated for the liver abscess. The specimens were exhibited before the Jefferson County Medical Society at the time and created considerable discussion. I have never seen a tropical abscess in the north, and this was the first one I had ever encountered at autopsy. In this case there was no severe bloody diarrhea, but typical undermining ulcers of the colon were found.

In the case reported by Dr. Tuley, when the peritoneum was opened at autopsy, many dark gray spots were noted just beneath the peritoneum of the large intestine; Elsewhere the intestine appeared to be dark purple in color. No intestinal abnormality was found proximal to the ileo-cecal valve, but when that point was reached

*Clinical Report before the Louisville Medico-Chirurgical Society, December 13th, 1918.

we began to find ulcers and blood. The farther downward we went the more blood we found, the lower portion of the colon containing large masses of fairly fresh blood clots. Probably fifty per cent of the mucosa of the large intestine was involved in ulcers which were different from those in the first case mentioned. They were not undermining nor very large, but fairly numerous; there were also a considerable number of circumscribed, circular or oval, rounded elevations in the mucosa. Some of the smaller ones were umbilicated and many of them were without marked necrosis. Even the larger ulcers were not particularly undermining, but they were deep, extending almost through the intestinal wall, and in these ulcers were noted many bleeding points. The marked hemorrhage, without considering the abscesses or ulcers, would cause one to hesitate about making the diagnosis of amebic colitis.

In the liver there were three abscesses, the largest being in the right lobe anteriorly. The greatest diameter was 15 cm. and the only structure intervening between the abscess and the right pleural cavity was a thin segment of diaphragm. In the right lobe, also, somewhat lower but near the capsule of the anterior portion of the liver, was another abscess the size of a hen's egg which was separated from the peritoneal cavity by only a thin portion of the capsule. The third abscess the size of an adult fist was found in the quadrate lobe posteriorly.

Without microscopic examination, the ulceration, confined entirely to the colon, together with multiple abscesses of the liver, made the diagnosis of amebic infection almost positive. The microscopic sections showed typical ameba histolytica in both the colonic ulcers and the liver abscesses.

Infective dysentery is ordinarily divided into bacillary and amebic. The bacillary type is characterized by marked congestion and inflammation of the mucosa with profuse hemorrhage. The large amount of hemorrhage in this case might well clinically have suggested bacillary rather than amebic dysentery.

The second case reported by Dr. Tuley is interesting in that it illustrates the point made by Dr. Frazier that people sometimes walk about until they are practically in extremis and then report to the Public Hospital for treatment. When the extent of the pathology is demonstrated by necropsy we wonder why it had not produced death long before.

This man had a perforated duodenal ulcer the diameter of a lead pencil and his peritoneal cavity was filled with blood and feces. About 2 cm. from the perforation was another irregular ulcer shaped somewhat like a shoe. It was about one inch in its greatest diameter; but did not seem to extend deeper than the mucosa. There was no other pathology in this case. I was informed at the time that this man had been working until a short time before he applied for admission to the hospital.

NEWS ITEMS AND COMMENTS

The Owl Drug Company at its recent annual meeting in San Francisco, of all its executives, department heads, district and store managers, announced that the sale of paregoric would be discontinued in all Owl Drug Stores except through the prescription of reputable physicians.

Dr. J. Garland Sherrill until a few days ago a lieutenant-colonel in the army, after an extensive surgical experience in the cantonments in this country and in the army in France, has returned to Louisville and resumed his practice; his office is at 440 Atherton Building, Louisville.

Dr. Livingston Farrand, President of the University of Colorado, has been appointed by President Wilson as Chairman of the Central Committee of the American Red Cross, to succeed William H. Taft.

As chairman of the Central Committee, Dr. Farrand will become the executive head of the National Red Cross organization on the retirement of the War Council, which will take place March 1st.

In changing the Red Cross from a war to a peace basis far greater tasks will be involved than those undertaken during the ante-war period, tasks that will require the full time of those interested with the executive duties.

Since the entrance of the United States into the war, Dr. Farrand has been the director of the tuberculosis work of the International Health Board in France, and has been in close contact with Red Cross activities. His broad knowledge of European conditions, his high executive qualifications and the vital force of his very unusual personality will all be vital factors in increasing the usefulness and broadening the scope of Red Cross work.

Dr. Farrand's work in this and foreign countries has shown administrative ability of the highest order and in dealing with complicated political, social and professional situations over seas he has displayed in a marked manner exceptional qualities of diplomacy, tact and cooperation.

That the program of the American Red Cross under peace conditions will be virile, statesmanlike and broad is unquestioned.

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COUNTY SOCIETY REPORTS

Breckinridge—The following officers were elected at our annual meeting: President, J. A. Sandbach; Vice President, R. W. Meador, Secretary-Treasurer, J. E. Kincheloe; Censors, A. M. Kincheloe, B. H. Parrish, L. B. Moreman.

All the members present paid their dues and a general discussion of the welfare of the society was had.

J. E. KINCHELOE, Secretary.

Carter—The Carter County Medical Society met at Grayson for the annual election of officers. W. A. Hart, president; T. B. Bays, vice president; G. B. O'Roark, secretary-treasurer.

Dues were collected from all members present.

G. B. O'ROARK, Secretary.

Caldwell—The Caldwell County Medical Society met Tuesday, February 25, and organized for the year. The following officers were elected:

President, L. O. Young; Vice President, J. M. Moore; Secretary-Treasurer, C. J. Pollard; Delegate State Society, W. L. Cash.

No business other than organization being on the program, the society adjourned without fixing a date for future meeting.

C. J. POLLARD, Secretary.

Carlisle—The Carlisle County Medical Society met at Arlington, March 4th, in J. F. Dunn's office with the following members present: W. L. Mosby, T. J. Marshall, H. T. Crouch, J. F. Dunn, W. Z. Jackson, and R. T. Hocker.

After Divine invocation by Rev. T. K. Harper, the society was favored by an excellent address of welcome by Rev. A. C. Abney. He emphasized the progressiveness of the medical profession not only along medical lines but also along all other lines pertaining to the progress of the community.

H. T. Crouch presented his paper on "Lessons Learned from the Present Epidemic of Influenza."

T. J. Marshall read a paper on "Sequellae Observed from the Present Epidemic of Influenza."

Both papers were very practical and up to date. They were discussed by all present. It was the most interesting program we have had for quite a while as books were laid aside and each doctor gave his own personal experiences in dealing with the "Flu."

Adjourned to Hotel Victor for dinner.

Reassembled at 1:30.

As **H. A. Gilliam** was absent with his paper on "Symptoms and Treatment of Arterio-Sclerosis," **W. Z. Jackson's** paper, which was a part of the symposium, was continued until the

June meeting and then both papers will be presented.

There being no further business the society adjourned to meet in June.

J. F. DUNN, Secretary.

Harlan—The Harlan County Medical Society met Saturday morning February 22, 1919, in the Masonic hall at 8 o'clock. N. S. Howard, president, called the society to order. It being the first meeting in this year the following officers were elected:

President, A. C. Foster; Vice President, H. G. Petrie; Secretary and Treasurer, S. E. Crouch; Censors, G. P. Bailey, N. S. Howard, C. V. Stark; Program Committee, W. W. Snead, W. E. Riley, O. P. Lewis.

After the election of the officers the society enjoyed a fine supper and smoke. There being in evidence plenty of chicken, oysters, vegetables, ice cream, fruits of all kind, cigars and cigarettes.

On motion, and carried, it was agreed to have a banquet the fourth Saturday evening in March at 8 o'clock, at which all the doctors and their wives and all the nurses in Harlan county are invited.

The following members paid their dues: N. S. Howard, G. P. Bailey, W. P. Cawood, C. V. Stark, E. M. Howard, H. G. Petrie, Dr. Miles.

Every one enjoyed himself and left looking forward to the next meeting.

S. E. CROUCH, Secretary.

Laurel—The Laurel County Medical Society met on the 11th day of December, 1918, in the office of the secretary and elected the following officers for the year 1919:

Capt. G. S. Brock, president; Mack Whitis, vice president; Oscar D. Brock, secretary-treasurer: Capt. G. S. Brock, delegate.

OSCAR D. BROCK, Secretary.

Larue—The Larue County Medical Society at its regular meeting elected the following officers: C. L. Williams, president; J. W. Wells, vice president; Leigh Maupin, secretary-treasurer.

After reporting a successful year's work the society adjourned.

LEIGH MAUPIN, Secretary.

Marion—At the February meeting of the Marion County Medical Society the following officers were elected:

T. I. Campbell, President; G. G. Thorton, Vice President; C. B. Kobert, Secretary,Treasurer.

All members present paid their dues. The society adjourned to meet in March.

R. C. McCHORD, Secretary pro tem.

Pulaski—The Pulaski County Medical Society met at Dr. Cain's office in Somerset, on March 3, 1919, for the purpose of electing officers for this year.

President, W. M. Price; Vice President, Brent Weddle; Secretary-Treasurer, Marion Warren; Delegate, Brent Feddle.

MARION WARREN, Secretary.

Rockcastle—At the regular meeting of the Rockcastle County Medical Society, the following officers were elected: President, A. G. Lovell; Vice President; Walker Owen; Secretary-Treasurer, Lee Chestnut; Censors, W. F. Carter, R. H. Lewis, and R. G. Webb. Seven members paid their dues.

LEE CHESTNUT, Secretary.

BOOK REVIEWS

Squibb's Atlas of The Official Drugs—By William Mansfield, A. M., Phar. D., Dean and Professor of Pharmacognosy and Botany, Union University, Department of Pharmacy, Albany, N. Y., Late Professor of Biology and Pharmacognosy, College of Pharmacy of the City of New York, Columbia University, and Botanist and Pharmacognosist to E. R. Squibb & Sons. Published by E. R. Squibb & Sons, New York.

A complete and up to date trustworthy handbook on pharmacognosy.

Surgical Treatment, Volume III.—A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By James Peter Warbasse, M. D., Formerly Attending Surgeon to the Methodist Episcopal Hospital, Brooklyn, New York. In three large octavo volumes, and separate Desk Index Volume. Volume III contains 861 pages with 864 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Per set (Three Volumes and the Index Volume): Cloth $30.00 per set..

Volume II carries out the systematic effort at simplicity as in previous volumes. The author has succeeded in including up to date procedure. This book is splendidly illustrated and very valuable addition to any surgeon's library. The index is in a separate volome and accompanies this volume.

Personal Hygiene and Home Nursing —A Practical Text for Girls and Women for Home and School Use—By Louisa C. Lippitt, R. N., Assistant Professor of Correction Exercises, University of Wisconsin (In New-World Science Series, edited by Professor John W. Ritchie). Illustrated. Cloth, vii—256 pages. Price, $1.28.

Published by World Book Company, Yonkers-on-Hudson, New York.

The purpose of Miss Lippitt's textbook is to explain the means by which girls and women may attain health and happiness in the present and lay the foundation for sane and vigorous lives in after years. In clearest terms it lays down practical instructions for the conduct of their daily lives. Not only are the rules set out, but the reasons which underlie them are made clear. Directions are given for preventing the spread of infection from cases of communicable disease; and instructions are furnished for the care of oneself and one's family in cases of accident or sickness. The author has given adequate treatment to the ideas that she considers most helpful to lay-readers, but she has taken pains not to go too deeply into the scientific aspects of any subject. She has desired to keep the book rather brief and for this reason has introduced only those topics on which women and girls seem particularly to need instruction.

The author is now engaged in physical reconstruction work with the wounded in France. She is the daughter of a physician, and during her long experience as a nurse, she has come into touch with many of the ablest members of the medical profession. She has also had experience as a lecturer in the nurses' training schools of Washington, D. C. The practical qualities that her duties have demanded are revealed in her book.

U. S. A. Edition of Wellcome's Excerpta Therapeutica.—This book, in addition to giving detailed information of value to physicians and laboratory workers also contans in the back a Complete price list of their products.

A Manual of Clinical Diagnosis By Means of Laboratory Methods For Students, Hospital Physicians and Practitioners.—By Charles E. Simon, B. A., M. D., Professor of Clinical Pathology and Physiology, University of Maryland Medical School. Ninth Edition, Enlarged and Thoroughly Revised. Illustrated with 207 Engravings and 28 Plates. Lea and Febiger, Publishers, Philadelphia and New York. 1918.

In preparing the present edition of the Diagnosis the author has carefully revised the entire work; many sections have been altogether rewritten; much new subject matter has been introduced, and last, but not least, a large number of new illustrations—many of them colored, have been added, so that the student of this rapidly growing subject will, it is hoped, find this edition also the same trustworthy guide in his daily work as the many editions that have gone before. Among the changes that have been made the writer would refer particularly to the detailed description of the ancestral types of the various leukocytes and the corresponding colored plates; the sections dealing with the intestinal animal parasites and the plate picturing the ova of the most important ones; the account of the various new methods employed in the diagnosis of acidosis; the examination of the blood for transfusion purposes; the colloidal gold reaction of Lange, etc.

The division of the subject matter into two parts—the first dealing with technical questions and the second with the collective presentation of the laboratory findings in the various diseases under their corresponding headings, which was first introduced in the seventh edition, and which the profession has found so advantageous—has been followed also in the preparation of the present edition. In the department of Clinical Pathology at the University of Maryland and College of Physicians and Surgeons of Baltimore the student during his third year is instructed especially in the technical side of the work, while in his fourth year, which is spent partly in the wards and partly in the laboratory, he is taught how to interpret the various laboratory findings. This division of the work the author would recommend to other teachers of the subject also, and he trusts that in presenting the subject to their students in this manner they may find the volume as useful as it was the writer's intention to make it.

Auto-Intoxication or Intestinal Toxemia—By J. H. Kellogg, M. D., Medical Director of Battle Creek Sanitarium. Modern Medicine Publishing Co., Battle Creek, Michigan. Price $2.50.

This book gives an account of a new method for changing the intestinal flora.

In a real sense, the method is not new for it has been in use at the Battle Creek Sanitarium for many years, although it is only within the last few years that the method has been thoroughly perfected and systematized.

How to change the intestinal flora, that is, to get rid of the "wild" or pathogenic bacteria which are produced in the colon to the extent of countless billions daily, and which flood the body with their virulent toxins and ptomaines, producing the manifold evils characteristic of autointoxication, has been one of the great problems before the medical world ever since Bouchard developed the theory of auto-intoxication and Metchnikoff discovered the relation of the colon bacteria to old age and to arteriosclerosis and other tissue degenerations.

Dr. Kellogg claims that he has solved this problem, and his book presents the technical details of a method which has been successfully employed in many hundreds of cases.

URGENT REQUEST FOR THE INFLUENZA VACCINE REPORTS.

Within the last four months Dr. Barrow and the Mayo Foundation have furnished and the State Board of Health has distributed free to the medical profession of Kentucky sufficient vaccine for prophylactic inoculation of about 500,000 persons against influenza, and especially against the pneumonia which has been the complication recognized universally as the principal cause of the fatality of the epidemic. As a means of procuring the vaccine the Board, acting for the profession and people, pledged itself that a faithful record of the results of the inoculation in every case in which it was used and blank forms for this purpose, prepared by Dr. Rosenow, were enclosed with every package of the vaccine sent out, with the request that the reports be sent in to Dr. South, State Bacteriologist, ninety days after its use, with such other data indicated in the forms as would make the information bearing upon the prophylactic value of the inoculation complete.

As the worst phases of the epidemic seem to have passed, the State Board of Health asks the Journal to kindly but most earnestly request that every one to whom the vaccine was sent fill and send in the reports as nearly as possible by the next mail, in order that its pledges made in a time of great stress to the Mayos may be fulfilled to the letter.

Amaurosis Under Ethyl-Hydrocuprein.—Ujiie reports the case of a girl of 10 who died in the third week of a pneumococcus peritonitis with sudden stormy onset in the midst of health. Complications on the part of the lungs had followed a laparotomy which had confirmed the diffuse suppurative peritonitis. The child was then given six doses of 0.2 gm. ethyl hydrocuprein (opto-chin) at four hour intervals. Two days later there was total amaurosis which persisted till death, only slightly receding toward the last, allowing perception of light. The microscope showed edema and vacuoles in the retina, with swelling and beginning destruction of the nerve fibres in the optic nerve. Necropsy of some pneumonia patients who had taken optochin without disturbance in vision showed the optic nerve entirely normal. Uhthoff has also reported recently two cases of optochin amaurosis in men of 28 and 45 with extensive destruction of the medullary sheath of the optic nerve as evidenced by Marchi staining. All the findings readily explain why in one case there may be complete and integral restriction while in another permanent damage may result.

A NEW INCISION FOR APPENDECTOMY.

By Leigh F. Watson, Chicago.

The number of incisions that have been brought forward for appendectomy time to time, show that no one incision is adapted to all cases. Many writers have noted that in the cadaver the base of the appendix is found at McBurney's point, while in the living subject it is below this point, usually on a level wth the center of Poupart's ligament. A number of operators have called attention to the ease with which the appendix can be removed when operating for right inquinal hernia. Since 1910, I have used a new incision, with its center over the base of the appendix, and believe that in many cases it is an improvement over those in general use.

Incision: A point one and one-half inches from the right anterior superior spine, on a level with a line connecting the two superior spines, is selected for the beginning of a vertical incision whch extends directly downward for two to three inches to a point just above, and to the inner side of the internal abdominal ring.

Advantages: Traction to expose the appendix is avoided, because this incision, in the external oblique and its aponeurosis, the most resistant structures, is directly over the base of the appendix. It can be enlarged without weakening the abdominal wall. The ilio-hypogastric and ilio-inguinal nerves are not injured because the incision lies between theme. Because this incision is made over the cecum, the small intestines do not crowd into the wound as they do when the McBurney and lateral rectus incisions are used.

Anthrax.—C. G. Dennett (Saco, Me.), Camp Dodge, Des Moines, Iowa (Journal A. M. A., Jan. 25, 1919), remarks that only meager attention has been given to the blood count in anthrax, and reports his studies of this in three cases of anthrax observed among recruits at Camp Dodge, one of them fatal. The following points are emphasized in his findings. 1. The leukocytosis runs concurrently with the blood culture findings, and 2. the eosinophile count is in inverse proportion to the severity of the infection. The leukocytosis is highest as the disease progresses and least when the blood cultures are negative as to the anthrax organism. Culture of the urine was negative in all three cases and the feces also negative in the nonfatal ones. The bristles of the shaving brushes used by all three patients were cultured and only that of Case 1 was found positive, but in this case it was of no significance as the brush had been used by the patient after the appearance of the lesion. The fact that anthracemia was demonstrated in two of the cases is of interest. The rarity in the literature of demonstrated anthracemia may have been due to lac kof bacteriologic studies.

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EDITORIAL

THE ASHLAND MEETING.

The Ashland Meeting of the State Association will be held early in the fall. New problems will confront the medical profession of Kentucky. Upon the method of solution we adopt will depend the future of medicine. However zealous, individuals can not settle these matters. The Kentucky State Medical Association is the organization that must solve our problems if they are to be solved right.

It is of the utmost importance, therefore, that every member of the Association arrange to be in Ashland for the 1919 meeting.

If some problem has occurred to you that needs solution, write it up. If some grievance is known to you that demands consideration, write it up. If your experience in war or at home has given you something that will be of value to sick or well people and to the profession, write it up. The program of the Ashland Meeting is now developing. If united, the medical profession of Kentucky can accomplish almost any object which it feels is necessary for the public welfare. We can only be united if we frankly discuss and squarely settle the conflicting views we naturally have as individuals.

It is important to remember that the County Medical Societies and the Kentucky State Medical Association are democratic organizations and that they operate exactly as the State does its corporate affairs. If its members elect strong delegates, and then attend the meeting themselves, there will never be any need for anxiety as to the efficiency and thoroughness of the work of the Kentucky physicians.

SCHOOL FOR COUNTY AND CITY HEALTH OFFICERS.

The Annual School for County and City Health Officers will be held in Louisville Monday, Tuesday, Wednesday and Thursday May 12th, to 15th, inclusive. A splendid, practical program is being arranged and it is hoped that every Health Officer in the State can be present. As is well known the law requires them to be present and provides for the payment of their expenses. Some of the most distinguished sanitarians in the United States will be on hand each day and we can promise that there will not be a dull or idle moment. The new plans for the new State Health Department will be fully discussed.

The influenza epidemic has made great inroads in our profession. The Health Officers and Health Nurses are entitled to these days away from home. We trust many of them will come to Louisville in time to see the Kentucky Derby on the 10th. Headquarters will be at the Seelbach and you should write and engage rooms there or wherever you desire to stop at once.

MORBIDITY REPORTS.

It is now ten years since we begun mortality and birth statistics in Kentucky. In no other states have these been of greater value in health work. Each year, however, every health officer and all those interested in public health, have felt increasingly the demand for the accurate and definite location of preventable diseases before death and whilst something still may be done to check their spread. With this idea in view the last three sessions of the School for County and City Health Officers have requested the State Board of Health to start collecting morbidity statistics. Every chartered county medical society in the State has passed a formal resolution calling on the Board for this same pur-

pose. The State Medical Association has twice urged it to arrange for these regular reports. The State Board of Health has hesitated to attempt to enforce the provision of the law in this regard because of the expense incident to their administration. The new law, however, provides that any head of a family who wilfully fails or refuses or any physician who shall fail or refuse to report to the local board of health the communicable diseases shall be fined not less than $10, nor more than $100 for each day he neglects or refuses to report, and repeated failure to report as therein provided, including reports of births and deaths, shall be sufficient cause for the revocation of a physician's certificate to practice medicine in this Commonwealth.

The State Health Officer has just returned from Washington where he has completed an arrangement by which each local health officer will be commissioned as an Assistant Collaborating Epidemiologist of the United States Public Health Service. Blank cards which will not require postage, will be furnished each physician in the State, so that he can report all cases of the communicable diseases that occur in his practice within 24 hours. The County Health Officer will be available for consultation in all matters connected with the preventive medicine side of the case at public expense. In this way epidemics will be recognized at the beginning and not after they have collected their toll of sickness and death. Each Saturday night the Health Officer will send all of his cards to the State Board of Health for tabulation, reporting by wire or telephone any emergency that requires help from the state forces.

All of this is going to require a little more work from each of us but it's the kind of work that we want to do, because it is another step towards showing both the profession and the public the sort of things that can be done only by well trained physicians.

It is of interest that this system has already been adopted in Mississippi, North Carolina, and Minnesota. Letters from the State Health Officers of these States indicate that the medical profession has been unanimous in appreciating its value and in helping to make its administration a success.

The physicians of Kentucky will remember that our State went into the Registration Area for Deaths the first year of the administration of the Vital Statistics Law and in the Registration Area for Births the first year there was such an area created. We expect to as rapidly forge to the front in morbidity statistics, which are really "more vital" than either of the others.

It is hoped that the necessary printing may be completed so that the blanks will be distributed by July 1st, and in the cities even earlier.

REPORTING INFLAMMATION IN BABIES' EYES.

During the past year a number of physicians were arrested and fined for failing to report to the Health Officer all inflammation of the eyes of the new born. Practically every physician in Kentucky has complied with this wise law and for their own protection it is important that all do so. It is of primary importance that these reports be made so that everyone may realize the importance of having a physician see these cases at the beginning. From the physician's standpoint it is of importance because he would have no defense against malpractice if he were sued in an unreported case, because this would make it appear that he was unable to make a diagnosis.

If you are not familiar with this Statute, be sure to look it up. The State Board of Health will furnish you a copy if you drop them a line. Droppers containing silver nitrate solution will be furnished free to any physician who requests it. The law requires the use of such solution.

AMERICAN MEDICAL ASSOCIATION.

This Association meets this year the second week in June. Within the last two weeks we have had eight letters from Kentucky doctors urging us to lay before the profession the importance of attending this meeting. In many respects it will be the greatest national medical meeting which has ever been held. Representatives from the medical corps of all the allied nations will be present to join in the important jubilation over the important part the medical profession played in winning the victory for freedom in the war. In fact, this will be officially known as "The Victory Meeting" and the President has invited every civilized nation in the world to be represented. Let's all arrange to go to Atlantic City and spend a week in June. Most of us have earned the rest and change and all of us will be better doctors if we go. Physicians who served in the Army are requested to appear in uniform; of course, with the "red chevron" of discharge.

"MERCOL."

This is a preparation of oil supposed to contain mercuric iodide to be used for injection purposes. It is put up by Howell and Company, of New Orleans, Louisiana. Prof. LaBach, Director of the State Health Laboratories, has reported to the State Board of Health that it does not contain even a trace of mercury. It is important for the doctors and druggists of the State to realize that preparations of this kind can be examined at the State Laboratories at Lexington at any time, without expense. Incidentally it will pay our physicians to buy their drug preparations from their own druggists, upon their own prescription, and not get unknown substances from unknown fakers. If you need something your own druggist can not put up for you, patronize one of the reliable houses that advertise in the JOURNAL.

REPORTS ON THE ROSENOW TREATMENT.

One of the most interesting investigations on a large scale that has ever been made was undertaken by the medical profession of Kentucky when at the instance of our State Board of Health Dr. Rosenow, of the Mayo Foundation furnished our doctors with enough of his vaccine against influenza-pneumonia to arrive at its value. This investigation was undertaken at a time when many of the bacteriologists in the great laboratories of the country were giving public and private vent not only to their own ignorance in regard to influenza but were expressing a very positive belief, based on their ignorance, that every one else knew nothing about it.

When one, not a bacteriologist, reads the various and varied findings of the laboratories in regard to the epidemic that has recently swept the world, he is impressed with the fact that there is a substantial agreement amongst all of them. The bacterial flora of the epidemic is well worked up, and the only bacteriologists who failed to understand it were those whose technique was obviously defective. The various vaccines suggested are matters rather of dosage than of principle. More than five hundred thousand Kentuckians were inoculated with the Rosenow vaccine. During the months that this vaccine was in use our Vital Statistics records show that more than fifty per cent of the deaths that have occurred in the State were from influenza-pneumonia. Blanks have been mailed to each physicians who has used this vaccine. Many of these have already been returned properly filled out. It will require some degree of patience and work on the part of each physician who used the vaccine to properly fill the blanks but the result is of such tremendous importance to the whole world that no one must fail to fill them as completely as possible.

The JOURNAL considers the selection of the medical profession of Kentucky for this great investigation as one of the greatest honors that has ever been bestowed upon it. It is up to every individual in the profession who has taken part in the investigation to complete his part by making a full report as promptly as possible.

In the mean while influenza-pneumonia is still occurring. The reports from some three hundred thousand cases already received indicate that the vaccine decreases influenza, almost entirely prevents pneumonia and in practically no case where it was used has death occurred.

Three deaths have been reported from pneumonia in cases which have been inoculated but two of these appear to have been a frank lobar pneumonia, not preceded by influenza which makes it possible that they were not of the prevailing epidemic type.

To one not a bacteriologist it would appear that the influenza bacillus is the cause of the present epidemic, that it destroys or renders inert anti-bodies which protect us from the ordinary streptococci which are practically always found in some or all the members of any particular household. Following the initial influenza-infection these germs, ordinarily inert develop rapidly and the patient succumbs to one or the other forms of streptococcic pneumonia. The vaccine seems to enormously increase these anti-bodies in most cases, to raise the opsonic index, thereby increasing the natural immunity we have to these forms of infection. All this, of course, is theory, based on the varying contentions of our laboratory experts, but it at least gives us a working hypothesis from which it is hoped we may be able to reduce the toll of death from these diseases.

If you have not already done so, let us urge you to prepare your report to-day. If you have used the vaccine and failed to receive blanks, write to the State Board of Health for them.

SCIENTIFIC EDITORIALS

MORTALITY UNDER ANESTHETICS.

Statistics on deaths under and from anesthesia are so variable that after looking through the literature at the various tables and compilations to be found in abundance, one is forced to the conclusion that such figures are practically worthless. One is also reminded at times of the axium: "Figures don't lie, but Liars will figure."

Throughout all the tables of statistics however, and averaging the various compilations we find one thing that is unchanging: i.e., the relative position occupied by the three most widely used agents, nitrous-oxide-oxygen, ether and chloroform. The three are in the order named for safety. Discrepancies in tables here and there are noted, as for example, the U. S. Navy had two deaths in the years 1908 to 1910 inclusive, in a total of 2921 anesthesias administered and both from ether, while the Army for the years 1904 to 1910 had four deaths in 9988 cases, all from chloroform. (Gwathmey, Anesthesia, pp 842).

Gwathmey, in 1911, to get mortality statistics for use in his great work on Anesthesia sent a circular letter to every hospital of a ten bed or greater capacity in the United States, Canada, Cuba and the Canal Zone, and the offices of the Surgeons-General of the Army and Navy. (If the letter went also to the Surgeon-General of the United States Public Health Service, for the figures from the Government's Marine Hospitals, it is not stated).

He received ninety-nine replies from hospitals in forty states, Canada, and the Canal Zone ,and from these he compiled his data. Taking the three agents above, and the nitrous-oxide-ether sequences his figures are as follows:

Nitrous-oxide-oxygen, total of 8,585 cases, no deaths.

Ether—"straight"—total of 157,453 cases, 28 deaths, ratio 1 in 5623.

Ether preceded by nitrous-oxide induction, 41,435 cases, 6 deaths, ratio 1 in 6,905.

Chloroform, 16,390 cases, 8 deaths, ratio 1 in 2,048.

In addition his table shows many combinations, mixtures and sequences, mostly with no mortality because of the small total, but for chloroform-ether sequences a mortality of 1 in 8,027, total administered 16,054, is of interest.

These figures are cited as the most reliable now available, inasmuch as they were procured in the painstaking manner noted.

It is seen by reference that they approximate Hewitt's English Statistics. Indeed it is likely that any table of anesthesia mortality so compiled would bring us out at about the same place, for there is no other way of getting the data save from the records of hospitals. Before we accept the death ratios, however, we must stop and consider two or three things.

To what extent; in what degree do they represent the real truth of the situation? At a general discussion of this subject at the last meeting of the American Association of Anesthetists the almost unanimous impression was that the number of deaths under anesthesia could about be doubled for reasons which are obvious.

First, of course, many deaths are never reported. Those occurring in hospitals which keep no careful systematic records; those occurring in residences where some small operation had been decided upon; those in doctor's offices. It is noteworthy that the records of Coroners' offices contain almost no reports of death due to anesthesia narcosis, as some statistic searchers have discovered. There is a very natural and human tendency to suppress the cause of a death under anesthesia if apparently due to the narcotizing agent. Such things do not react well on the reputation of either surgeon or anesthetist. All surgeons and anesthetists have personal knowledge of a number of fatalities which they feel sure have never been incorporated in any statistics. Anesthesia deaths occurring in the hands of the inexperienced—internes and nurses anesthetizing "on their own" without real supervision, are, it is safe to say, rarely recorded as such. The patient's people might ask why an experienced anesthetist was not in attendance. In our own experience, which has been fairly large and comprehensive, we have had one death due undoubtly to the anesthesia. We have seen three deaths on the table that could in no way be attributed to the anesthesia directly, but which in one instance reflected in a way on our judgment in the selection of agent and in technic; and several very trying experiences, from which, by virtue of early diagnosis and prompt action, not without the assistance of our God of Luck, we emerged successfully. We promised ourselves long ago to report any anesthetic fatalities occurring to us.

Before closing, a brief reference to the mortality figures on one agent, nitrous-oxide-oxygen, must be made. Gwathmey's data—quoted above—were gotten before this agent came into such general use as it has now, and as his total number of administrations is but 8,585, it is not surprising that no deaths are

noted. We are convinced that while nitrous-oxide-oxygen has a definite field for its exhibition, and is, properly chosen and properly given, the safest of all agents used by inhalation, it is by no means "totally free from danger" as some of its enthusiastic proponents declare. In more recent literature there are many reports of death from this gas.

Miller's table shows two deaths in 80,483, or 1 in 20,000, (Albert Miller, American Year Book of Anesthesia and Analgesia, 1915, pp. 107). This table does not include Lukes' death. (Fatal Asphyxia and Syncope under Nitrous-oxide-oxygen. H. Clifton Luke New York Medical Journal, January 30th, 1915). J. L. Baldwin of Columbus, in an article entitled "Nitrous-oxide-oxygen, the Most Dangerous Anesthetic," reported 14 deaths from nitrous-oxide-oxygen which he had gathered in Columbus alone! He states that he has knowledge of many deaths, gotten in personal communications, and unreported. He charges a "conspiracy of silence" on the part of the nitrous-oxide-oxygen proponents, inferring that deaths from and under this agent are deliberately suppressed. However, this may be, there has been observable, from a few years ago up to the present, a marked tendency to boost nitrous-oxide-oxygen beyond its deserts. Whether behind this is the ulterior motive of "talking up" gas for advertising purposes on the part of some surgeons and anesthetists, or whether these have simply been run away with by their own enthusiasm and are conscientious, we cannot say. The fact remains, that this valuable agent has definite limitations, and in our opinion, while ranking first in safety, where applicable, is by no means devoid of danger. Indeed in inexperienced hands, and unwisely chosen subjects, its dange ris great.

W. Hamilton Long.

PYELITIS.

One of the most frequently unrecognized diseases in children is pyelitis. This is due to the fact that men do not make a practice of examining the urine in cases of an obscure character. It is a good practical rule with all children suffering from fever, the origin of which is not perfectly obvious, to make a thorough examination of the urine; it would not be amiss if such examination were made even in more easily diagnosed diseases, for pyelitis is very frequently a complication or a sequella of other diseases. Whenever there is a bacterial infection nature attempts by increasing elimination to remove the bacteria or their toxic products. Sometimes the route of elimination is through the mucous membrane of the bowel, sometimes it is the expectorated mucus and debris from a lung involved by tuberculosis or pneumonia, or it may be through the skin; but, always the kidneys may participate more or less in this phenomenon of elimination. It is no wonder then that there frequently results an irritation of the kidney tract after severe infections. We look for an albuminuria following irritation of the glomeruli of the tubules. There will be appreciably amounts of the exudate of albumen, very probably casts, possibly both. In other cases there seems to be a predilection toward the pelvis of the kidney and a true pyelitis develops; or this condition may be the direct result of the infection with the organism responsible for the immediately preceding illness, or perhaps more frequently there results a point of lessened resistance and there develops a colon bacillus infection of the pelvis of the kidney. The urine under such circumstances will show albumen, pus cells clumped together, possibly blood cells and casts. The clumping of the pus cells is essential to the exact diagnosis, for there is hardly any urine that will not show some pus cells under centrifugation. One must also remember that occasionally in some severely irritated kidney it may be blocked off and one examination of the urine may appear fairly normal, to be followed in a day or two by an increased outpour from the infected kidney. The urine will be highly acid and will contain colon and other types of bacteria.

In all acute infectious diseases one should anticipate this kidney infection by giving alkalies to tolerance during the acute attack. In this way the acids generated by the bacteria will be neutralized. The filtration through the kidneys is much favored, the colon bacillus growth inhibited and many a case of pyelitis prevented. If pyelitis has developed the alkaline treatment gives the most satisfactory results. But alkalies must be pushed until the urine is strongly and permanently alkaline to litmus. This requires a potash or soda salt as ammonia is a volatile alkali. Five grains of potassium or sodium citrate given well diluted with water every two hours will render the urine alkaline, but it will frequently take three or four days even with this dosage to secure this result. The writer does not care for hexamethylemine in such cases as it frequently, in children, produces a severe irritation of the kidney and bladder. It is often necessary to resort to colon autogenous vaccine to get perfect relief.

The prognosis in children is relatively more favorable than in grown people. It is probable that the pyelitis develops with less provocation and also heals more easily than in the case of the adult. Notably, the pyelitis which

follows influenza, offers a more favorable prognosis in the young.

The usual history of these cases is that of fever persisting after the original disease should have terminated. The temperature curve varies in the day from nearly normal to perhaps 104½. There may or may not be a history of distinct chills. There are usually no localizing symptoms so that the physician will go over the lungs looking for reinfection, will examine the ears for otitis media, or will watch the stools for intestinal toxemia. Leucocytosis is not so marked as with pus in any other location. Final resort to examination of the urine will often clear up the diagnostic picture. It is specially important at this season when there has been such a wide, extensive and virulent micro-organismal infection of people of all ages and all conditions that special care should be taken to diagnosis early and treat persistently these cases which otherwise pass into chronicity and untimely death.

PHILIP F. BARBOUR.

DIFFERENTIAL DIAGNOSIS OF SYPHILODERMS.

The polymorphism of the cutaneous manifestations of syphilis is so marked that there are but few dermatoses that it may not simulate. However, we shall confine ourselves to a few of the more common.

The initial chancre and the late gumma of the skin, alike, may be mistaken for carcinoma cutis. Chancres of the lip frequently are difficult to differentiate from herpes labialis or progenitalis.

The macular eruption of syphilis may be mistaken for tinea versicolor or other trichophytoses. Tines circinata and herpes iris, too, may be confused with circinate syphiloderms. Pustular acne and variola and the large acuminate pustular specific eruptions may sometimes be differentiated only by the history or other symptoms.

We have seen papulo-squamous syphiloderms which had a remarkable resemblance to psoriasis, although usually located on the flexor surfaces rather than the extensor surfaces. Psoriasis guttata and the small pointed papules of syphilis may resemble each other, although the latter is more apt to be confused with keratosis pilaris or pityriasis rubra pilaris.

It is quite often a difficult point to determine whether one is dealing with a tubercular syphiloderm, lupus vulgaris or carcinoma, or even a mixture of two or three of these.

In dealing with vitiligos, too, there may be no way of differentiating leucoderma syphilitica from the non-specific form. Alopecias of tricophytic origin, even alopecia, areata, may be confused with syphilitic loss of hair.

In many of these cases the symptoms may render the diagnosis clear, as the itching of ring worm or the back-ache of small-pox. In others microscopical examinations for spirochetae, trichophyta or the bacilli of tuberculosis may be sufficient. The Wassermann reaction may exclude the diagnosis of syphiloderm or the history of the case may render it probable as the etiological factors. Sometimes it is only by watching the progress of the case that an absolute diagnosis may be made.

M. L. RAVITCH and S. A. STEINBERG.

INFLUENZA COMPLICATING PREGNANCY AND LABOR.

The most pathetic feature of the late influenza epidemic was the high mortality among pregnant women. It seemed to be especially fatal to young women between twenty and thirty years of age. Whether pregnant women were more susceptible to the disease than the non-pregnant can not be determined as no statistics are available but it would seem plausible that a woman whose system has the added burden of taking care of the toxic products of a fetus would be less able to ward off such an infection if exposed to it. The disease had a serious effect upon the pregnant woman throughout the period of gestation, in labor and even in the puerperium. In the early months recovery from the disease was more apt to occur but abortion often followed, due either to an interference with the pregnancy from excessive coughing or an infection of the placental site and of the ovum itself as noticed by the friable character of the ovum reported by several writers. In the late months of gestation it may readily be conceived that the large uterus and distended abdomen proved a very serious handicap to the woman suffering with pneumonia, complicating influenza, and the large majority of such patients died. Death of the fetus occurred in many instances no doubt due to the extension of the infection to the placenta and to the fetus.

Post mortem in a number of reported cases showed pathologic influenza changes in the lungs of such infants. As one writer remarks "In pregnancy there is a lowered resistance to general sepsis and the site of the placenta is a favorable location for a secondary localization of the general infection or an endometritis due to the pneumococcus." It was was at first thought that induction of labor and emptying the uterus would give a better

opportunity for recovery but this did not prove to be the case in influenza as death usually followed.

If the patient went into labor, the process was unusually tedious and slow and there was quite a tendency to post partum hemorrhage. As is well known all cases of influenza showed a marked tendency to hemorrhages, in the non-pregnant, from the nose, bronchi and intestines. In the puerperium the woman was liable to a very severe infection as the uterine mucosa furnished a very favorable site for entrance. The writer saw a very marked case of this kind in consultation. Twenty-four hours after a normal delivery this patient showed a temperature of 105 degrees. When seen three days later she had a temperature of 104 degrees with a pulse of 80, was cyanotic and showed localized areas of pneumonia in the lungs all typical of influenza and not of puerperal infection as the attending physician had feared was the case.

In the treatment of influenza complicating pregnancy the most essential measure, as experience proved, was absolute rest in bed using the bed pan for all purposes, then plenty of fresh air and sunshine. The brightest room in the house should be selected and the sun given free access to the room. The high temperature and early muscular pains generally responded to Acid Acetyl Salicylic given with liquor potassium citratis. Later in the disease the writer generally gave small doses of calomel with thirty grains of bicarbonate of sodium and a low enema of a teaspoonful of bicarbonate of soda to one pint of warm water three times daily. In most cases there was a very low blood pressure and three minims of solution of adrenalin were given hypodermatically every six hours. Quite a number of cases responded favorably to such treatment, pregnancy continuing. In one very pathetic case induction of labor was resorted to in hopes of saving the patient. This case is given in detail as follows:

This patient, twenty-seven years old, a primipara, was seen in consultation on the night of December 31st, in consequence of pregnancy complicating influenza. She had been sick a week at that time with considerable elevation of temperature and a rather harassing cough. According to her menstrual history, she was just about seven and a half months pregnant and an examination of the abdomen showed a uterus about two inches above the umbilicus. The consultation was for the purpose of deciding the advisability of interrupting the pregnancy in order to give the patient a better chance to recover from the influenza. A few sibilant rales could be heard in the left side of the chest but there were no other symptoms at that time that would indicate that an immediate interruption of the pregnancy was necessary and the regular treatment by the attending physician was continued. A second consulttation was called the following evening and it was found that the patient had well marked areas of pneumonia in both lungs. Interruption of the pregnancy was at once decided upon in the interest of both the mother and the child.

As the patient had influenza none of the private infirmaries were open to her and so she was removed to the city hospital where Dr. Henry E. Tuley, the superintendent, accorded us every accommodation that the institution offered. The writer being on the obstetrical staff could remain in attendance upon the patient. All manipulations were performed without anesthesia, the patient stating that she felt very little discomfort during the procedure. The patient was placed in the exaggerated lithotomy position, the posterior wall of the vagina retracted, the cervix caught with two vulsellum forceps and gently drawn down. The cervix was then slightly dilated with a metal dilator and a large sized Voorhees Bag rolled as compactly as possible was caught in a uterine dressing forceps, introduced through the cervix into the uterus and held there until the bag could be distended with sterile water and tied off. The patient was then put to bed at midnight, two minims of Pituitrin were given hypodermatically every hour. Contracting pains began at 2 a. m., the bag was expelled at 8 a. m., the head of the baby at once presenting at the vulva and delivery of an asphyxiated infant followed shortly after. The baby was resuscitated with some difficulty and lived two hours. Marked improvement showed itself in the mother at once so that she had a practically normal temperature on the third and fourth day after the interruption of the pregnancy, but on the fifth day her condition became worse again and she died at noon on the sixth day after delivery. The question that arises in connection with cases like the above is as to whether it is justifiable to at once interfere with a pregnancy complicating influenza or whether it is necessary to await alarming symptoms, before feeling justified in the procedure. The result in this case was not favorable although for a few days there was remarkable improvement. The question may even arise as to whether this patient's life might have been saved if the pregnancy had been interrupted after the first consultation. fortunately the experience in the large eastern cities with the interruption of pregnancy has been so disastrous, that one is not

justified in performing it except as a last resort. In spite of the unfavorable reports, however, cases will no doubt occur at times when interruption of pregnancy should be done to give the mother a possible chance or perhaps to save the life of the child when the mother's chance for recovery is gone. Under such circumstances, delivery by the Voorhees Bag method as described in the conduct of this case will be the safest and most humane procedure that can be adopted.

EDWARD SPEIDEL.

ORIGINAL ARTICLES

HEMORRHAGE IN THE COMMON NOSE AND THROAT OPERATIONS.*

By S. G. DABNEY, Luisville.

Preventive Measures: Operation should not be done during or soon after acute inflammation unless urgently called for, as in the evacuation of pus. The statement of St. Clair Thompson that hemorrhage is apt to be more free and more serious in young children and in persons past sixty years of age is true as to elderly people, but not true I think as to children whose tonsils and adenoids are every day removed and rarely with serious hemorrhage.

The stout short-necked, plethoric adult is likely to bleed most.

Calcium lactate or chloride given in ten to fifteen grain doses for two or three days before operation is stated to increase the coagulability of the blood. I have seen no reports of the test by the coagulometer and clinically I do not think the drug is used for this purpose as generally as it was some years ago. Da Costa says that he has never been convinced of its value. Where there is reason to expect unusual hemorrhage, however, it may be well be tried.

Weinstein finds a one-half grain of emetin given hypodermically before operation lessens hemorrhage by about one-third, and says that the coagulometer shows coagulability to be increased by it. He reports good results from pituitrin, too, as Corwin also does, giving it in ampules just before operating.

Cases of genuine hemophilia, manifested by plain and positive hereditary tendency and by history of alarming hemorrhage from trivial injuries are rare, but when present or where alarming, hemorrhage is otherwise to be feared, injections of horse serum followed by coagulation tests would be advisable.

The one pre-eminent agent to prevent bleeding during operation is the extract of the supra-renal gland—this is especially valuable in the nose where its constricting effect at the same time increases the operative field; but th adrenal preparations act by stimulating the adrenal preparations act by stimulating producing coagulation when applied to a bleeding surface. Their use for this latter purpose (except in slight capillary oozing), though extensive and sustained by eminent authorities, has never seemed to me either logical or valuable. To get the full effect of adrenalin, especially when used in conjunction with cocaine, a solution of the two drugs saturated on absorbent cotton should be left on the surface of the nose for half an hour and preferably for even a full hour. One objection to adrenalin is that there is more likely to be deferred hemorrhage, coming on some hours after the operation, often annoying, very rarely serious. It is said that general anesthesia is especially dangerous after the hypodermic use of adrenalin.

With the evolution of tonsillectomy there seems to be a tendency to return to some ring instrument, either with a rather dull sliding blade (Sluder) or a wire snare, in the ring (Sluker-Beck). These instruments, and especially the Sluder-Beck lessen hemorrhage.

Curative Measures: Unless hemorrhage is serious do not be precipitate in efforts to arrest it. Simple measures and a little patience often suffice.

After nasal operations bleeding may be stopped by holding the nose firmly for ten or fifteen minutes, the head being inclined slightly downward and the month kept open for breathing. Syringing with hot or cold water may be tried. Plugging for twenty or thirty minutes with gauze or absorbent cotton saturated with peroxide of hydrogen sometimes suffices. The mixture recommended by Morell McKenzie years ago consisted of six drams of tannic acid and two drams of gallic acid in an ounce of water has often served me well in causing clotting.

Except in operations at the posterior nares, a nasal splint of compressed sponge or cotton is preferable to packing. Posterior packing is rarely called for after nasal operation though it may be temporarily necessary in operating for sinus disease under general anesthesia. Except for this purpose packing is undesirable. When demanded it is important to remember that the packs should not stay in longer than twenty-four hours. This is worth noting, for so eminent an authority as Da Costa says that packs should not be left in for more than two or three days. So far as I know all nose and throat writers strongly advise that the plug

*Read before the Kentucky State Medical Association, Louisville, Ky., September 4-6, 1918.

should not be left in for more than twenty-four hours—to do so is to greatly increase the risk of inflammation of the middle ear and the accessory sinuses. A two to ten percent solution of gelatin in normal saline solution has been used with exeellent results as a local styptic. It has also been used hypodermically, but there seems to be considerable danger of tetanus following its use in this way.

To arrest hemorrhage following operation on the tonsils our eourse will vary according as the hemorrhage comes from a spurting vessel or from general oozing. Of course where a bleeding vessel can be seen it should be caught with the forceps and held for a few minutes. If this does not suffice gentle torsion should be used.

Leslie Davis finds the hemorrhage after tonsillectomy nearly always comes from a single vessel about the upper third of the tonsillar fossa and in adults he habitually puts a ligature around this vessel. Such a procedure I believe is only exeeptionally neeessary. Very frequently the bleeding consists in a general persistent oozing. The simplest and generally the most effective means of controlling this is pressure applied either with the finger wrapped with sterile gauze or by means of a sponge on a sponge-holder. Hot sponges may be of great value here as well as elsewhere in arresting hemorrhage, and Keen recommends a hot solution of chloride of ealcium applied locally in this way.

In many hospitals it is the custom to sluice the patient's faee and neck with ice-water directly after tonsil operations, and St. Clair Thompson thinks this a valuable procedure both for arresting hemorrhage and for rousing the patient from the anesthetic.

Having the patient lie on the side at the time of the operation and after it lessens the chanee of the blood trickling into the windpipe and gives a better opportunity to wipe it out as it collects in the cheek. After all, however, the danger of the blood going into the lower air passages does not seem to be great. Personally I have never seen trouble from this source though it is the rule for some blood to be swallowed and vomited up later.

If the bleeding persists in spite of the above measures, either at the time of the operation or subsequently, it may be neeessary to put on a tonsillar eompression forceps or to sew the anterior and posterior pillars together perhaps ineluding a small sponge in the fossa.

In those very rare eases where hemorrhage is intractable and alarming it is well to bear in mind the suggestion of Crile to inject one dram of adrenalin chloride solution in a pint of normal saline solution into the sub-cutaneous tissues of the breast and to give stryehnia and atrophine hypodermically.

Finally it is said that ligation of the earotid has been neeessary. It is well to remember that the pallor and apparent exhaustion may be from nausea and that with a pulse not over 100 for instanee, it is hardly possible that the hemorrhage should have been severe.

A hypodermie of morphine is often one of the best agents in hemorrhage from the nose or throat, as it is important to allay all nervousness and anxiety.

Seeondary hemorrhage is rare after nose and throat operations. It may be defined as hemorrhage oeeurring any time after forty-eight hours. It is due either to the removal of clots or erusts or possibly a slough.

Obviating these three conditions, therefore, would be the natural means of preventing it, but sometimes it may occur in spite of every precaution.

Where post-operative hemorrhage is persistent and threatens to be serious it may be advisable to return the patient to the operating room, give an anesthetic and carefully search for bleeding points using either a liguture or sewing together the anterior pillars as above described. Before deciding on this eourse it is well to remember that vomited blood is likely to appear far more than it really is and that the pallor may be due to other conditions than hemorrhage.

In my own experience I have never yet found it necessary to return the patient to the operating-room and use the second anesthesia, but I feel that this has been rather a matter of chance than of any skill or good judgment on my own part.

Summing up, I would make the following eonclusions:

First: The fear of hemorrhage need very rarely deter us from operating about the nose and throat.

Second: In plethoric adults, especially those of short neek and heavy build, it is well to give the chloride or lactate of calcium a few days before operating. If this is not practicable, a half grain of emetine given hypodermically or an ampoule of pituitrin may be administered just before the operation.

Third: In all cases it is wise to see that the patient is free from any recent aeute inflammation, is in good eondition and that the bowels are open.

Fourth: To obtain the full effect of adrenalin and eocaine in the nose, a pledget of eotton soaked in these solutions should be left in situ for from half an hour to an hour.

Fifth: Nasal plugging is undesirable and except for temporary purposes while operating under general anesthesia, it is not often necessary.

Sixth: When plugging is done, the

packs, and especially the posterior ones, should never be left in place more than twenty-four hours.

Seventh: Of the internal measures to control nose and throat hemorrhage the hypodermic of morphine and atrophine is among the most valuable.

Eighth: After tonsil operations if a spurting vessel is seen it should be caught in the artery forceps, and if necessary torsion practiced. Ligation is rarely called for. If the hemorrhage comes from persistent oozing as observed after retracting the anterior pillar and carefully examining the fossa, pressure either with the gauze on the fore-finger or by means of a sponge will usually arrest it. A hot sponge may be more valuable and especially one dipped in a hot solution of chloride of calcium or a 5 per cent solution of gelatin in normal saline.

Ninth: Should hemorrhage be severe, sewing the anterior and posterior pillars together possibly with a little piece of gauze between them may be called for.

Tenth: Post-operative hemorrhage is often manifested by the vomiting of blood. When the blood appears fresh and red it would indicate that the bleeding is still going on, but it is well to remember that vomited blood seems far more than it is and the pallor and exhaustion may be due to nausea.

Eleventh: In rare instances it may be necessary to return the patient to the operating-room and under general anesthesia search for the bleeding spot and use some of the surgical procedures above mentioned giving at the same time, if very urgent, a sub-cutaneous injection of adrenalin chloride in normal saline and remembering that cases are reported where ligation of the carotid has been called for.

DISCUSSION:

W. B. McClure, Lexington: Those who do a good deal of work on the throat are liable to come in contact with the distressing condition of hemorrhage either primary or secondary following operation. I want to emphasize a point made by the essayist that no operation should be done on the throat following an acute inflammation of the organs of the throat. The only fatal case that I have ever had any knowledge of followed the operation of tonsillectomy where there was an acute inflammation of the tonsils. These hemorrhages, I think, are frequently due to the fact that in the operation we wound the pillars and thus produce a bleeding surface. In my own experience in tonsil work I have never yet had to return a patient to the operating room for a second anesthesia, and I have rarely met with cases that were not controlled by pressure. Of course, if we have a bleeding surface (oozing is the most common form of it), if we have a bleeding vessel, the thing to do is to go after it just as any surgeon would do by taking hold of the vessel and stopping the bleeding. There are several methods of doing this, the final of which is ligation. In my experience ligation is rarely demanded. I am speaking now of the throat. As to the remedies that may be used as a preventive measure or as a corrective measure when the hemorrhage is on, I have gone through the whole list of them and have come to the conclusion that none of them are reliable. Pituitrin I have used frequently, also horse serum, and so on, without appreciable results. This, however, was not in throat work but in nasal hemorrhage. Like Dr. Dabney, I believe it is a mistake to leave the packing in any longer than we are compelled to do. I have unfortunately in a few cases withdrawn the packing too soon, and I hesitate to pack because in removing it you so often start up a second hemorrhage, and you are just where you were when you started or worse off. In all nasal hemorrhages, where packing must be done at all, I believe the post-nasal packing is absolutely the best. I have not had satisfactory results by attempting to pack the nose from the front. You should put in a post-nasal plug, and the pressure of that plug, sufficiently conical, will control the hemorrhage. I wait to see if it does, and if not, I pack from the front as well I get the packing out in twenty-four hours if I can. The instrument may have quite a good deal to do in tonsil work with the hemorrhage. Since I have been using the Beck instrument, I have had very little apprehension of hemorrhage. This, you know, is done with the wire snare, and you produce a certain amount of torsion by the use the instrument, and I have very little uneasiness about hemorrhage with the Beck instrument.

As to the insufflation of blood, some one wrote a scary article a few years ago detailing a number of cases of pneumonia due to the insufflation of blood following tonsillectomies. I think it was some western man, who gave the statistics of his experience in a great many cases of pneumonia which followed the insufflation of blood from tonsil operations. Personally, I have never had any experience in that line nor seen any. Of course, post-operative hemorrhage must be looked out for. It is a question when it is most likely to occur. Some say three to five days. The worst hemorrhage I ever had occurred after eight days following a tonsillectomy.

This is a subject that is well worthy of free discussion, and I am delighted that Dr. Dabney saw fit to write upon it, as it is something of interest to all of us, the general practitioner and specialist as well.

J. G. Carpenter, Stanford: You have heard from the specialist, and it is well that you should hear from the hill Billie with reference to tonsillectomies and tonsillotomies. In the first place,

it is the hyperplastic or fibroid tonsil, and not the hypertrophied tonsil, you have the hemorrhages from. Remember, there is a perivascular inflammation of the fibroid tonsil. In the hyperplastic tonsil the blood vessels have been over distended, they are chronically dilated. Through perivascular inflammation the vessel cannot contract and retract and close in upon itself. Therefore, you have hemorrhage. It is, therefore, in the hyperplastic tonsil, that these hemorrhages generally occur unless the patient is a bleeder. But by compression with forceps and a little torsion or ligation you can control that hemorrhage. Again, in addition to tannic acid and gallic acid, you will find antipyrin, fifteen grains to the ounce, is a wonderful local hemostatic in tonsillar, throat and nasal surgery.

In regard to packing for hemorrhages, the nose and throat and naso-pharynx ought to be in an antiseptic condition, and you can make them so; then you put in your antiseptic tampon, and it can remain twelve hours, twenty-four hours, forty-eight hours, or seventy-two hours, if necessary with impunity. Again, it depends upon the constitutional and local condition of the patient, whether you have hemorrhage and there will be polyp or a deviated or ulcerated septum or turbinate, or there may be adenoids producing a plastic condition and you are predisposed to have hemorrhage. I have seen patients operated on whose organs were undergoing fatty degeneration, and their tonsils would be removed and you would have a severe hemorrhage. So in doing these operations let us know the local constitutional condition of the patient. Let us know the patient, the soil upon which we are to work, so that being forewarned we will be fortified and we can do the best that can be done for the patient, whether in the city or in the country. A chemical, and microscopic analysis of urine should be made for albumen, tube casts, sugar or to see if patient has an oxaluria, a phosphaturia or uric acid anemia, and test for the per centage of hemoglobin.

Martin F. Coomes, Louisville: I was much interested in Dr. Dabney's excellent paper, and there is one thing I want to mention and to emphasize which I regard of great importance, and that is, not to operate on menstruating women. After the period of menstruation the woman should be allowed to go for at least ten days befort being operated on.

A most delightful hemostatic is hot alum water. Keep it at hand, compress the tonsil and the cut surface, and the beauty of it is you do not have any debris from hot alum water. It is not poisonous, and it is an important hemostatic agent. Things have changed so much in the last four or five years that it is hard to say which is the best thing to do. I do not believe in using a sharp instrument about the tonsil. I use serrated scissors a great deal, such as we employ in amputating the neck of the uterus. There is very little hemorrhage following the application of these serrated scissors. The wire snare or loop around the tonsil lessens the amount of hemorrhage.

Lastly, those practitioners who think they can do so many things and have not had the experience and skill, should let these cases alone and let them go to the men who are better qualified to do the work.

R. H. Cowley, Berea: In doing tonsil work in young children I find a general anesthetic has to be used, but I think the use of a local anesthetic with older people has taken away almost all the terror from hemorrhage. It has for me. I have not had a case of severe hemorrhage since I have used local anesthesia in this work. I have done two operations in children seven years old, with cocaine. A local anesthetic gives one a chance to see exactly what one is doing. I think that a great many cases of hemorrhage follow tonsil work are due to the fact that one cuts too far and deep when a general anesthetic is used. The throat fills up with blood and even when the operator is skillful he cannot see exactly where he is cutting. The technique of the local anesthetic method is quite simple and requires far less surgical skill than the other method. One has full control of the field and unless the patient is extremely nervous the work can be done very safely and quickly.

S. G. Dabney, Louisville, (closing): I think it is a wise suggestion to use local anesthetic whenever it is possible to do so. But in children very few will permit of it. We in Louisville I feel are too prone to give a general anesthetic in doing tonsillectomy. This can be done with very little pain, and I am quite sure Dr. Cowley is correct when he says the operation is done more nicely under local than under general anesthesia. That is less true in the last few years than it was when tonsillectomy was first practiced, without the Sluder or Sluder-Beck.

With regard to the instrument used, personally I have used the Sluder with dull blade, and I find I have much less hemorrhage. It is unquestionably true that in the dissection practiced some years ago we were far more likely to injure the pillars, causing more blood than we did by the ring instrument we are now going back to.

I agree with what Dr. McClure said about the antrum. Every now and then, when we operate on the antrum of Highmore, we take off the inferior turbinated bone to make a free opening and we have a sharp hemorrhage from that, but we are not likely to have it from the middle turbinate, but in these cases of operation on the inferior turbinate, making a free opening in the antrum, it is not uncommon to be called back in twenty-four hours. Like Dr. McClure, I have had hemorrhage occur again and again in some cases when the packing is removed. It is not a good

thing to leave the packing in the nose longer than twenty-four hours. If you do, you are exceedingly likely to increase the risk of otitis media and sinus trouble. Some excellent authorities think we should change the packing in twelve hours. It is better to change the packing in twenty-four hours even though you have to repack, than to leave the packing in longer.

The use of antipyrin is an excellent suggestion and it is a valuable agent and well worth bearing in mind.

Dr. Coomes' statement of not to operate on a woman at the time of the menstrual period is very timely and appropriate. I have certainly seen trouble from that myself. I believe dashing cold water over the face and neck is an excellent plan, in that it helps to arouse these patients from the anesthetic and it lessens hemorrhage.

I would like to have heard the gentlemen who were kind enough to talk about my paper say something with regard to lactate of calcium.

W. B. McClure, Lexington: I would like to ask the essayist to elucidate his experience as to high blood pressure as a causative factor of hemorrhage. Nothing has been said about that.

S. G. Dabney: Although I did not refer to it in my paper, it was implied in the statement of St. Clair Thompson that hemorrhage is apt to be more severe in the aged and in children. He is mistaken in regard to children, but the reasons why hemorrhage is more severe in elderly people is that they have high blood pressure. The suggestion is a good one, and a wise thing to remember. If we operate on a patient past thirty-five or forty years of age, it is an excellent precaution to take the blood pressure and if it is too high, to use certain measures to reduce it before operation. I am obliged to the various gentlemen for their discussions.

Clark and Rehfuss (Jour. A. M. A., May 22, 1915, LXIV, No. 21.) This is a very interesting paper resulting from a very critical study of gastric digestion. The authors find that in health the gastric juice shows a definite protein curve of very low degree. This content is increased in disease by the addition of an exudation of protein material from inflammatory, ulcerous, or carcinomatous mucous membranes, or by the addition of partially digested and retained food residues, or the swallowing of protein material such as sputum. The pathological significance arises when a curve shows any marked deviation from the recognized standard, i. e., when there is undue concentration of protein out of all proportion to that normally found at a particular phase of digestion. If, therefore, a marked increase in protein does not conform in a general way to the acid curve it can be definitely stated that the protein is coming from other sources than the protein of the test meal.

THE NEWER OPERATIONS IN CHEST SURGERY.*

By Louis Frank, Louisville.

Not many decades ago surgical exposure or exploration of the thoracic interior with local application of therapeutic or reparative measures, was considered too hazardous to be justifiable; and, because of that attitude, many patients with intrathoracic lesions now known to be remediable by appropriate surgical procedures, were permitted to perish under temporizing methods of management. This applied alike to civil and military practice, and to primary as well as secondary surgical lesions: that is, penetrating thoracic wounds and injuries, and affections originally thought to be medical which later became frankly surgical.

During the last few years gradually advancing strides have been made in the surgical treatment of intra-thoracic lesions, due partly to greater perfection in mechanical diagnostic methods, and partly to a better pathologic understanding. Recent improvements in roentgenoscopic investigation have made earlier diagnoses possible in many intrathoracic diseases, the etiology and pathology of which were formerly but imperfectly understood and in consequence treatment oftentimes grossly misapplied. The importance of roentgenoscopy in diseases of the chest can hardly be overestimated.

Among the intra-thoracic surgical lesions most frequently encountered are traumatic wounds and injuries, which may be produced by a great variety of agencies, and are clinically divided into simple and complicated, or penetrating and non-penetrating. In either type there may occur a greater or lesser degree of contusion and laceration of the surrounding tissues, depending upon the character of the traumatizing agent and the nature and extent of a damage inflicted. Simple or non-penetrating wounds will be accorded scant consideration in this paper, as their treatment has become practically standardized.

It is principally in the management of penetrating or complicated wounds with the infliction of more or less serious injury upon the heart, pleura, lung or the thoracic blood vessels, that surgery has made the greatest advances. The experienced surgeon no longer hesitates to undertake thoractomy, whenever such an operation is indicated, and his reparative steps are thus executed under guidance of the eye. It has thus been possible to remove foreign bodies from the heart and success-

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fully suture cardiac wounds, to repair traumatic injuries involving the great thoracic blood vessels, to resect necrotic areas and effect closure of damaged pulmonary tissues, to incise the pulmonary substance and remove imbedded foreign bodies, and to perform many other necessary operations upon the esophagus, pleura, diaphragm, etc.

The complicating lesions to be anticipated in wounds of the chest are: hemoptysis, emphysema, pneumothorax, hemothorax and pyothorax; pneumonitis, abscess, gangrene and hernia may occur. However, the majority of these complications should be preventable provided the patient be subjected to early operation under proper aseptic surrounding and by a competent surgeon. It must be borne in mind that in untreated penetrating wounds of the thorax the death rate has always been very high, and in operated cases according to older methods the mortality has been much greater than that which has attended similar traumatic lesions in other situations. It is my firm conviction that considerable reduction in the mortality rate may be secured by earlier operative intervention. In making this statement, however, I am not unmindful of the fact that non-intervention is still advocated by many surgeons where infection has not already supervened.

In this connection the following quotation from one of Moynihan's classic papers seems particularly interesting: "The surgeon no longer allows infection to be well established in the wound; his aim is to attack by approved methods—the free opening of the wound, the excision of all dead or contaminated tissue, the removal of all fragments of clothing, of all projectiles and of all foreign bodies—and then to secure the earliest possible closure of the wound which remains. No less an ideal and no less scrupulous a practice should guide him also in the treatment of wounds of the lung and pleura. The time has gone by when he can justly allow an infection to become deeply ingrained before adopting those tardy, incomplete and often ineffective methods with which he has been too long content." With regard to the most opportune time for operating, Duval and a host of other surgeons agree that a lung wound like any other wound is best operated upon before it becomes infected or before the infection has spread to the pleura. The best time is usually within the first twelve hours if the general condition of the patient is good. Duval in particular favors the present-day treatment of war wounds of the lung by early surgery; lung wounds should be treated according to the same general and local principles as apply to every other war wound. (Duval). To this important statement Hathaway adds, "In general treatment wounds of the chest follows the same line as those of the abdomen, head, knee, or other joints; they require just as early operation and it will be found that results are just as good."

Hutchinson divides chest wounds into four classes: (a) non-infected hemothorax or pneumohemothorax, (b) open pneumothorax, (c) infected hemothorax, and (d) foreign body in lung or pleural cavity. In simple non-infected hemothorax or hemopneumothorax he merely aspirated the pleural cavity, using a fair-sized trocar after cocaine anesthesia and small knife-slit in the skin. If the amount of blood clot is large, the chest should be opened, the blood and clots removed, and tight closure made, with final aspiration of retained air. "If blood is allowed to remain a long time, the lung becomes bound down by adhesions and a large proportion eventually become septic." Open pneumothorax is treated by prompt closure after cleansing the wound and pleura; shock and danger of infection is greatly reduced by this procedure. In infected hemothorax it is impossible to aspirate the clot which contains the infection; it is also impossible to sterilize the clot by any known method. Thoracotomy is therefore performed under nitrous oxide and oxygen anesthesia. The hand is inserted, adhesions separated, and the clot removed; the cavity is irrigated with saline solution and the chest closed, mopping a small quantity of the antiseptic over the lung and pleura. The serum that collects and air left in are aspirated after forty-eight hours. Three or four aspirations are necessary during convalescence. Foreign bodies may or may not require removal depending upon their location, character and the amount of damage inflicted.

In an important recent contribution, on War Surgery of the Chest, Lockwood and Nixon claim that at advanced dressing stations the patients with open pneumothorax are greatly improved within an hour or two if the wound is carefully cleansed without an anesthetic and the skin sutured with silkwormgut through a plug of gauze to prevent leakage of air. After such temporary treatment the patients must be sent to the casualty clearing station where they are placed between warmed blankets and given hot drinks but no stimulants. Continuous proctoclysis of sodium bicarbonate and glucose (5% each in water) is started and intravenous sodium bicarbonate (2%) given if required. In severe cases blood transfusion is performed. Urgent dyspnea from hemothorax and pneumothorax must be relieved before operation by aspirating. If fresh hemorrhage is suspected the aspiration should be partial and combined with oxygen replacement. If the

services of an expert radiographer are available, then the required surgical measures should be attempted, provided also that the physical signs can be carefully studied, and finally that most perfect asepsis can be secured.

The authors state that operation is especially indicated where: (a) early evacuation will not be necessary, (b) injury of the diaphragm is suspected, (c) open pneumothorax exists, (d) a badly crushed chest is found even though there is no external wound, (e) a large missile has traversed the pleural cavity, whether lodged in the chest wall, pleural cavity, lung, mediastinum, or pericardium, and finally (f) on all very acutely infected cases although the missile is not retained. Repeated X-ray examination is essential during the progress of the case. Signs of cardiac or pericardial involvement do not constitute contraindications to operation.

The patient is given omno-scopolamine an hour before operation, and if not sleeping a smaller dose half an hour before being taken to the operating room. A half-sitting posture with the injured side dependent is the most comfortable; if the patient cannot be so placed the lung should be grasped with forceps immediately on opening the thorax and sufficient traction made to correct the mediastinal displacement. Local anesthesia is used until the hand is inside the chest, then light nitrous oxide. The most serious cases can be thus operated upon, and better control of movements of the lung, mediastinum and diaphragm is permitted. The two-stage operation is only possible with this method of analgesia; ether should never be used. Thorough excision of the wound area is necessary. After excising the track of the missile gloves and instruments are changed, the skin again cleansed, and fresh towels applied. When the position of the wound permits, resection of the fourth rib from the mid-clavicular to the posterior axillary line furnishes the easiest access to the thorax. One must be careful not to increase shock by two powerful retraction. "Mop out" the chest, check fresh bleeding, and search for laceration of the diaphragm. If the wound is right-sided, excise the track sufficiently wide to expose the liver, remove the missile if in the liver and cleanse its track with curette and swab wrung dry out of saline and ether. If oozing occurs insert deep catgut sutures. Close the wound in the diaphragm but do not suture it to the chest wall.

The lung held by forceps is brought into the opening and the missile or fragment of rib removed and the track in the lung closed using a non-cutting blunt needle. Partial lobectomy may be necessary if there is extensive laceration. If an open bronchus is found it may be closed by crushing and ligation. Care should be taken to remove all blood clots, pieces of cloth, fragments of bone, etc., from the thoracic cavity. This can best be done by sponging first with saline then with warm ether swabs. Always close the chest unless there is extensive gas gangrene of the lung. Do not waste time on the parietal pleura as it can be included in muscle sutures. The chest must be hermatically closed with the first layer of muscles. Keep a thick sponge in the pleural wound during the entire operation, excepting when the hand is actually in the chest. A seven-inch adhesive strip is of great aid in keeping on the dressing, leaving the sound side free. Keep the patient semi-recumbent, inclined toward the injured side. A two-stage operation is indicated if the entrance and exit wounds are wide apart, where gross lesion of the bone or extensive destruction of the tissues necessitates extensive operation on both wounds. Bilateral lacerations of the diaphragm should also be treated by the two-stage method. Injuries of the heart and pericardium are best treated by making a parasternal flap of the fourth and fifth, or the fifth and sixth costal cartilages, depending upon the probable site of the lesion.

In the treatment of infected hemothorax Dobson says rib resection, evacuation of the fluid and clots, and immediate closure of the wound is ideal and is being more and more widely adopted at the casualty clearing stations, but is only applicable in the earliest stages of the infection. He uses a special silver cannula without a terminal aperture but twelve small lateral holes. The eighth rib is resected. Tuffier's rib spreader inserted, the pleural cavity "wiped out," the foreign body removed, and other complications treated. The canula is then inserted through the third or fourth interspace at about the mammary line. The original incision is then closed around a tube sufficiently long to reach into a bottle of antiseptic fluid and the cavity is then irrigated every two hours with Carrel-Dakin solution. The author claims the infection is thus quickly controlled, the lung expands well, and the general condition rapidly improves.

In his late classic paper on Gunshot Wounds of the Lungs and Pleura already mentioned, Moynihan says the fact that during the first two days deaths are due chiefly to hemorrhage, and in later stages to sepsis, must direct the timely and appropriate treatment. Early operations for arresting hemorrhage from the lung tissue have been tried only in certain hospitals in either French or British zones; but so far as the results of the work have gone, they appear to justify a continuance and indeed a general adoption, of the principle of

early and direct treatment of the wound. Immediate intervention (according to Duval) should comprise: (a) closure of the chest wall in cases of "open thorax," (b) thoracotomy with suture or plugging of the lung in case of grave hemorrhage or threatening asphyxia, and (c) treatment of progressive surgical emphysema.

(1) Closure of the chest wall has as its object suture of muscles and skin to avoid traumatopnea, pneumothorax, and a continuing infection of the pleura from the suppurating external wound. The principles are those guiding the surgeon in similar wounds elsewhere; the result in the saving of life and suffering are incalculable. The gravity of open thorax can hardly be exaggerated; when part of the chest wall has been torn away, the lung often bruised or lacerated is exposed; it retracts toward the hilum and leaves gaping and bare, a huge cavity wherein putrefaction may occur and a large surface from which absorption can take place. It is most urgently necessary to close such ghastly wounds if it is physically possible. Gregorie has accomplished this in seventeen cases with sixteen recoveries.

(2) Thoracotomy is indicated in all wounds of the lung causing hemorrhage. Suture of the lung tissue affords perfect hemostasis. When a foreign body, projectile or sequestrum is felt the lung is incised over it if necessary, and after extraction of the foreign body the wound is sutured accurately. Any blood lying in the pleura is carefully evacuated, perfect cleansing of the cavity is insured and the wound is closed, it may be after gentle wiping of the parts with ether; drainage is not needed.

(3) In the treatment of progressive emphysema, closure of the wound in the lung will obliterate the channel through which air escapes into the tissues; multiple skin incisions will relieve the tissues already distended and crepitant. In simple penetrating injuries cleansing and excision of the wounds followed by complete approximation of the edges is all that is necessary. In many instances even excision is not required; the points of entrance and exit may be cleansed and covered with sterile dressings.

It is Moynihan's belief that when hemothorax is present no interference as a rule is needed for some days; but there may be exceptions to this when rapid or large accumulation of fluid is causing urgent dyspnea which threatens life. The dangers of early aspiration of the fluid are of course related to reopening the pulmonary wound which lightly sealed may bleed afresh as the lung expands. At the end of a week or thereabouts aspiration has probably a most beneficial effect upon the lung, allowing it to expand much more rapidly than would otherwise be possible, and preventing the formation of dense crippling adhesions which may embarrass the free action of the lung for a long time or even permanently. Withdrawal of the fluid is therefore most desirable; its replacement during aspiration by oxygen allows more fluid to be taken and causes the minimum distress to the patient. In cases of large hemothorax which have presumably remained sterile and in which no active treatment has been adopted, there is a protracted period of incapacity of the lung. If aspiration is performed the appearance of the fluid gives valuable information as to its condition in respect to bacterial infection. If the fluid closely resembles new port wine in color, it is free from infection; if it is clear and almost colorless the amount of blood contained is small: most of the fluid is then the result of pleuritic effusion. A turbid fluid like weak cocoa, or an effusion with any suspicion of offensiveness, indicates that infection is present and that the condition is one to be treated as an empyema.

When hemothorax has become infected then thoracotomy is necessary. In the early period of the present war the operation was practiced on the lines of the civil operation for empyema; a short piece of rib was excised, the putrid and most offensive fluid evacuated, and a large drainage tube introduced. Such patients remain sometimes for weeks, even for months, with open wounds. Tuffier has modified, profoundly for the better, the treatment of these tedious and most trying cases by adapting to their needs the Carrel-Dakin technique. The operation in so far as resection of the rib and evacuation of the fluid are concerned is precisely similar to the procedure in cases of empyema; but instead of one large tube several small tubes threaded with wire are placed over the cavity at well-judged intervals. Their position and proper distribution may be confirmed if a roentgenogram is taken. A small quantity of loose gauze is packed into the wound and a safety tube for drainage of excess fluid lies in one angle of the incision. Dakin's fluid is installed in the usual manner. At the end of ten days all discharge—there is rarely more than an extremely small quantity after the first two days—has ceased and the tubes are therefore removed and the wound closed.

There is no doubt, says Moynihan, that many cases of suppurating hemorrhage would do better if operated upon quite early by a wide opening of the chest, and complete clearing away of all masses of clot and pleural lymph often so tenaciously adherent, and by removal of any projectiles. Patients not operated upon, or operated upon by the older

methods, linger on in unsatisfactory condition for such long periods that every fair opportunity that offers for curtailing the tedious and not wholly safe period of their convalescence must be embraced. The Carrel-Dakin technique will here find one of its most valuable indications. This is only to bring the treatment of wounds of the lung into line with that practiced elsewhere.

The question: "What is the history of patients in whose lungs projectiles are retained" cannot be satisfactorily answered based upon present knowledge. However, according to Moynihan, a certain experience is not likely to be changed by a large survey of cases. We may say with confidence that a rifle bullet, or a small piece of shell casing may be retained for months or years without causing distress and without affecting appreciably the normal function of the lung in which it lies buried; but with large or irregular pieces of shell the case is different. Moynihan has recently given special attention to such patients and has submitted a number of them to operation, and the results so far entitled him to say that it is probably a safer as it is certainly a speedier procedure to submit all patients in whose lungs a large projectile is retained to operation rather than to leave them untreated. In almost every case operated upon the projectile has been dropped at once into a culture medium; with one exception all missiles were infected; the organisms most commonly found were staphylococci.

The following are the details of the procedure adopted by the author for the extraction of bullets from the lung. The new features in the method are chiefly due to the initiative and the superb technical skill of Duval to whom he most gratefully acknowledges his indebtedness. The operation is performed under anesthesia induced by ether and oxygen. A preliminary injection of morphine and atropine is given about half an hour before the operation.

The patient lies flat on his back with arms to the side; a curved incision about five or six inches long is made exactly along the line of the fourth rib; the fibers of the pectoralis major are split, and the pectoralis minor separated from the rib. There are many points of hemorrhage requiring clip or ligature; all must be carefully secured so there is a perfectly dry field. The rib and costal cartilage are exposed for a distance of not less than five inches. An incision is made through the periosteum midway between the upper and lower borders and this membrane is stripped from the rib on both surfaces; a Doyen's raspatory is very useful for this purpose. In earlier operations he cut through the costal cartilage and then divided the rib with forceps so a length of four to five inches of rib could be removed; but in later operations he has freed the inner end of the rib after division of the cartilage, then passed a strip of gauze beneath it and pulled it upward and outward. In this way the rib may be saved and replaced at the end of the operation. However he says this is not a point of great importance, for when the periosteum is left a new rib is formed very rapidly and the chest wall soon becomes as firm as ever. Care is taken in excising the rib and in lifting it away not to injure the pleura, which must be separated widely from the ribs above and below, to the inner and outer side of the wound. Unless this is done accurate closure of the pleura later on, always difficult, will be impossible. A retractor is now placed in the wound to widen the interval between the ribs above and below; as wide a gap as possible is made so the whole hand can be easily passed into the chest. The pleura is then incised along the line of rib and air enters freely into the pleural cavity; as a rule this causes no disturbance and does not alter the rate of the respirations or of the pulse.

The hand is now passed into the chest cavity. Adhesions of the lung to the parietal pleura may be encountered; these are sometimes very slender and easily broken through, but at times are tough and strong and are with great difficulty severed. If they are numerous or thick and tough, bleeding may occur quite freely for a minute or two. With gentle pressure from a hot moist swab the oozing was soon checked. In one case where a projectile was in the base of the right lung posteriorly, the whole lower lobe and great part of the upper lobe were intimately adherent to the parietal pleura. The adhesions, however, separated in the same way as adhesions within the abdomen separate, by gentle pressure and stripping. Thoracic adhesions bleed more freely than those encountered within the abdomen. When all are loosened the collapsing lung lies free within the pleural cavity. It may now be seized with fingers or special light form of clip and drawn to the anterior opening, and, little by little, be coaxed out of the wound. It is surrounded by warm cloths soaked in normal saline solution. When a lobe of the lung is freely delivered it is palpated "from top to bottom." Any projectile embedded in it is felt at once as a rule; even little sequestra blown in from a rib may be recognized without difficulty. These foreign bodies are as easily recognized as the particles of gritty sand in a new sponge. When the projectile is felt the part of the lung containing it is made prominent, the lung tissue lying

over it is incised, the metal removed, and the wound sutured. Deep stitches of catgut are passed through the lung substance, and with gentle tension act as a hemostatic.

If necessary fine catgut sutures may be used to secure accurate approximation of the pleural edges. If there is any bleeding from the collapsed lung, it is slight and easily controlled, but precision in suture is most desirable, for expansion of the lung will rapidly be secured when the operation is completed. When the sutures are completed the lung is replaced, the cavity of the pleura carefully dried and emptied and a gauze swab wet with ether wiped over the visceral pleura, and over the adhesions which may have been separated. The retractor is removed and the parietal pleura now sutured. This is quite the most difficult part of the operation, indeed cannot be accurately done unless this membrane has been stripped freely from the chest wall before being incised. The rib, if it has been turned back, is replaced, and fixed in position by a suture through the costal cartilage. The muscles are carefully sutured and the wound edges accurately approximated without drainage. The closure of the wound should be so carefully accomplished as to seal the chest hermetically. When the dressing is applied, a two-way needle may be plunged into the chest, and the ether and air extracted therefrom. The lung then rapidly expands and faint breath sounds may be heard at once. No shock follows this operation.

The following general conclusions are given by Moynihan:

(1) The approximate mortality from gunshot wounds of the chest at all parts of the line of communication is twenty per cent.

(2) The causes of death are hemorrhage as a rule within twenty-eight hours; and sepsis after the third or fourth day.

(3) The local conditions in wounds of the chest wall and lung are in all respects similar to those met with in wounds elsewhere. The missiles are the same, their destructive effects upon the tissues are the same, and the infecting organisms are the same.

(4) The lung tissue is more resistant to attack than many other tissues. The opening of the pleural cavity and the resulting exposure of a large serous sac to infection and all its consequences add, however, a danger of the most threatening character.

(5) The chief essential in the treatment of all cases of penetrating wounds of the chest is rest.

(6) In clean perforating wounds of the chest, rest together with the cleansing and dressing of the wound of entrance or exit, will lead to the recovery of the great majority of patients.

(7) In cases of "open thorax," the earliest and most complete efforts possible must be made to secure closure of the wound after an appropriate toilet.

(8) In those rare cases of grave hemorrhage, when hemotysis is present or when the blood escapes by the wound, a direct access to the source of the bleeding must be obtained, when all contingent circumstances will permit, and the wound in the lung must be treated by suture, preferably; or by plugging of the cavity from which the blood escapes.

(9) In cases of hemothorax when the blood effused is small in quantity and remains sterile, no active measures are necessary, unless absorption is long delayed. Aspiration, repeated if necessary, may then be performed.

(10) In cases of hemothorax, when the blood effused is large in amount and remains sterile, aspiration after the seventh or eighth day, or earlier in cases of urgent dyspnea, certainly hastens convalescence, permits a more rapid expansion of the lung, and prevents the formation of firm adhesions which may permanently cripple the free movements of the lung.

(11) In cases of hemothorax, whether the amount of blood is small or large, when infection takes place, open operation is necessary. Early operation both when the Carrel Dakin technique or Morrison method are adopted saves many weeks of convalescence and permits of a more perfect functional recovery.

(12) Small foreign bodies, or rifle bullets, embedded in the lung, often cause no symptoms; they become encapsulated and may safely be left.

(13) Larger foreign bodies retained in the lung may cause distressing or disabling symptoms for long periods. In such cases removal after resection or elevation of the fourth rib through an anterior incision will allow of the safe removal of the projectile from any part of the lung. Pieces of metal so removed are almost always infected.

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PELLAGRA OR ERYTHEMA ENDEMICUM.

By J. C. McCreary, Eddyville.

This is a disease, which during the past ten years, has been gaining ground in our country, previous to that time it seemed to greatly predominate, chiefly, in the Europeon countries, espeeially Italy, Spain and Roumania.

The first ease occurred in my practice in the year 1907, since then I have eneountered a number of eases.

SYMPTOMS

As they have appeared at the time of presenting themselves for treatment. In all of them the skin manifestations was the first to cause them to seek medical attention. At the close of winter and as the spring begun to open, an intense redness would be notieed on the back of the hand, in some cases, a deep bronze or purple, accompanied by a tingling, burning sensation, and as expressed by some, a feeling as if needles were being pricked into the back of the hand. Faulty digestion and nutrition, a feeling of lassitnde, headache, great fatigne, vertigo and pain in the epigastrium, followed by diarrhea. A feeling of weakness and indisposition wonld continue throughout the summer and fall up until cold weather set in, when all conditions begin to improve and qnite disappear until about the middle of March, when all symptoms wonld reappear, but in a more malignant form.

My close observations have taught me that the entaneous manifestations are the last to appear, in the majority of cases. It seemed tc divide itself into three stages, first, your attention is direeted to a congested condition of the skin, giving it a thick spongy feeling, second, a pigmentation with sealiness, third, a tendency tc atrophic thinning. To recapitulate, the first appearance is a dark red, later changing to a dark brown or bronze. It makes its appearance npon the uncovered portions of the body, hands, wrists up to the elbow if short sleeves are worn, neck and face, into the margin of the hair. The skin of the face is at first thin but gradnally thiekens. Many complain of an intense itching sensation and later an impaired or loss of sensation.

In a few cases the inflammation seems to be in the superficial layers of the skin, in others down to the deeper strata. The epidermis desqnamates, the amount greatly varying in different patients. The skin may sometimes have a fissured appearance, some swiveled and old. Sometimes vesieles, bullae and petechiae may be associated with the other manifestations.

All of the above features become more pronounced with eaeh sneeeeding attack of the same patient, All of the above manifestations may be repeated year after year, and eaeh suceeeding year may add entirely new symptoms until we begin to note a deeided muscular weakness, accompanied by mental

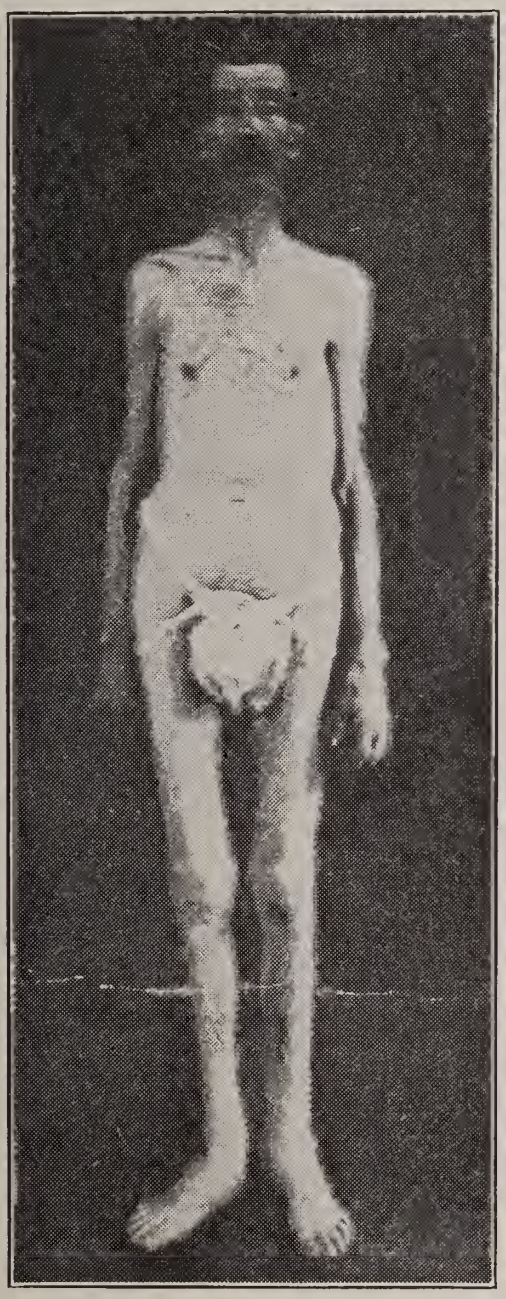


deficiency, a pronounced despondeney or melaneholia.

In the advanced stage when the skin presents the dark purplish, red or brown, you may have an extensive exfoliation and the fin-

gers assume a drawn claw-like flexed position and fixed.

The patient gradnally becomes debilitated and very greatly emaciated, brought about by the faulty digestion, resulting in the diarrhea, as stated above, a part, however, may



be due to the involvement of the cerebrospinal system.

After the patient has had several attacks the pulse becomes weak and thready, with a continual muscular weakness, pain in the head and the spinal column. Sometimes a very pronounced stupor, and not infrequently insanity results, and sooner or later a fatal termination, ensues.

ETIOLOGY

This disease, I have found to occur, most frequently among the poor classes, however the wealthy are by no means immune to its ravages. It has been found, as before stated, in most all European countries, Italy and Roumania leading. It was at first thought to be brought about by the incessant use of corn-meal bread, but later and a more thorough investigation has proven this idea not true, has been the case in my experience. Some of them suffering with the disease had never been users of corn-bread.

I am inclined to the idea that sanitary condition and surroundings has much to do with its prevalence. I must also admit that among some of my cases the sanitary conditions and surroundings were ideal, and their station in life was among the wealthy. Among all of my cases, without an exception, I have found the impaired nutrition, and to make a long story short, I am still at sea as to its real cause.

The condition of the sympathetic central nervous system, I believe to be very largely due to the overwhelming number of toxines, presumably produced, in the intestines, and thrown out into the general circulation. I have had no opportunity for a postmortem finding. The cutaneous changes, I attribute, to the mild congestion and irritation and to the atrophy of the rete.

PROGNOSIS AND TREATMENT

In mild attacks, a favorable prognosis may be safely given with careful diet selection and sanitary surroundings provided and looked after. Severe cases generally prove fatal, with a duration of three to seven years, others may be prolonged to ten or fifteen years.

Treatment—I do not claim to have found any specific, the main and chief management consists in providing the patient with the proper food and good hygienic surroundings, with an effort to improve the general health.

Medicinally, I have accomplished the best results with arsenic, iron and sodium. In giving this, the best results will be produced by administering it inter-muscularly, and using it in the form of iron, arsenate and sodium cacodylate, put up in ampules. I administer it alternately, giving the iron one day and the sodium the next.

REPORT OF CASES

Case 1. Mrs. — —, married, age 35, no children; father dead at 65, of asthma; mother living at age 60, health good; four brothers

living in good health: three sisters living, health good; no brothers or sisters dead; had all the diseases of childhood; good health up to the age of thirty, when the present disease made its appearance. Lived in Idaho for five years, was living there when skin manifestations first appeared on hands and face, and up to the time of my examination had had three returns, each spring.

This particular case differed from my others in the respect that it was worse upon the face and neck than upon the hands and forearms. Her face was horrible to look upon, was no resemblance of her former self, to the extent that she was not recognizable to friends, who had been intimate with her. She stated that she felt in perfect health during the winter months, but about the middle of March it made its appearance. I pronounced hers a typical mild case and put her upon iron, arsenic and sodium. She made improvement from the first and by the following December had entirely disappeared, but before spring she left the community and I lost sight of her, to know as to the permanency of my treatment.

Case 2. Mr. — —, age 64, married, height 6 feet, weight 165 previous to the attack, previous health had been good. Most of his life had been spent in the mountains of eastern Kentucky as a farmer, with bad sanitary surroundings. Had always been a dear lover of his corn-bread and plain diet. I could secure but little of his family history. He first presented himself June 4th, 19—. Says he had had all of the diseases of childhood, no serious sickness. At this time he presented all of typical skin manifestations in an exaggerated form, with digestive disturbances, marked diarrhea, of a severe character, often involuntary, both night and day, and resisted all treatment, going from bad to worse, emaciation pronounced, and terminated fatally, August 4th, just two months from first visit.

Case 3. This case, which is now under treatment, is, and has been, the most interesting, for many reasons, of any I have ever examined. With this case I will submit two photos, one back and one front, that will convey to your minds more than I can ever express in words.

Mr. O., age 57, height 5 feet 11 inches, weight 88 pounds. Father died at 62, of pneumonia; mother living age 75 and health good; two brothers living, ages 40 and 45 respectively; one sister living, age 42, health good. One brother died of pneumonia; one sister died of cancer at 45; one sister died in childbirth.

Has had all of the diseases of childhood, has had pneumonia, typhoid and scarlet fever. With those exceptions his health has been good up to eighteen months ago when he was taken to jail where he was confined for a year and a half, and from which time he dates the beginning of his present disease. When taken to jail he weighed 165 pounds. I first saw him February 22nd, last, when his weight was 88, as stated above, and presented all of the skin manifestations of a typical case of pellagra, accompanied by a marked diarrhea of a dysenteric character, feet greatly swollen, which you can note in the accompanying picture. His mental condition was very bad, a continual muttering delirium, marked despondency, very weak and emaciated, barely able to stand upon his feet. Taking all symptoms into consideration, the prognosis was and could be no other than grave. Did not expect him to live more than three or four weeks.

His hygienic surroundings were carefully looked after, and diet selected, and the medicinal treatment begun, which consisted of iron, arsenic and sodium. The form selected was that of iron, arsenate and sodium salicylate put up in ampules and was given on alternate days, the iron arsenate one day and the sodium cacodylate the next, given intermuscularly.

He was weighed upon March 22nd, just one month after instituting treatment, pulling the scales down at 100½ pounds, a gain of 12 pounds. Weighed again upon April 3rd 106 pounds, making a total of 18 pounds since February 4th. His mind has very greatly improved and at the present time it looks as if we were going to bring about a complete cure from what, at first, was considered worse than hopeless.

Complement Fxation in Tuberculosis—The complement fixation test for tuberculosis was made by Barnes and Bernton on 279 sanatorium patients. Three hundred and ninety tests were made. The serum was examined within twenty-four hours in all but thirty cases; never later than forty-eight hours. Positive reactions occurred in only about 30 per cent. of progressive cases and in only 9 per cent. of negative sputum cases, hence the test is regarded by the authors as being of but slight value in this series of cases.

Effect of Influenza on Tuberculosis.—The testimony obtained by Hawes from the superintendents of state tuberculosis sanatoriums on this point is that an acute attack of influenza, usually associated with bronchopneumonia, of greater or less severity, has had remarkably little effect on the already existing tuberculous process as far as increasing its spread or its activity is concerned. Hawes' experience in his own work confirms these observations.

INFLUENZA-PNEUMONIA VACCINE, (PROPHYLACTIC) IN THE TREATMENT OF PNEUMONIA.*

By J. F. Adams, Bagdad.

In writing this article it is not my motive to try to instruct anyone, but merely to give my personal experience as to the results of a few cases in which I used this vaccine, hoping to hear from some of the profession as to whether they think the results obtained were in any way due to the vaccine or merely to a peculiar type of the disease.

Case 1. T. J. H., age 56, developed influenza and on the third day after the attack developed broncho-pneumonia. Temperature ranging from 103 to 104 and on the fourth day of the pneumonia I gave 1 c.c. of the vaccine and the following day had reduction of temperature of one degree. I repeated the dose and on the morning of the sixth day I found temperature normal with all symptoms improving. Patient went on to rapid recovery.

Case 2. Ned S., age 10 years, developed influenza and was running a temperature of 101 to 102½ for three days when he developed a case of lobar pneumonia; temperature reaching 103 to 104½. I gave ½ c.c. of the vaccine and the following night he had a subnormal temperature, but on the fourth day temperature reached 104½ again, when I repeated the vaccine in the same dose and on the morning of the fifth day I found temperature of 99 and remained about that for two or three days, when it reached normal and patient made a good recovery.

Case 3. Ruth J., age 8, developed influenza and on the third day of the disease she developed lobar pneumonia with temperature of 104 degrees, and on the fourth day I gave the vaccine and found on the following morning temperature reduced one degree, at which time I repeated the vaccine and on the following morning found a normal temperature with improvement of all the symptoms; patient made a nice recovery.

Case 4. Mrs. R. L., age 26, mother of four children, developed influenza and was at the time almost ready to be confined, and on the third day of her attack I was called to deliver her and found a temperature one hour before delivery of 101. The labor progressed nicely and was over in about two hours and on the following day when I saw her I found a temperature of 99 degrees and getting along nicely; but on the second day after labor I was called to see her and found her with broncho-pneumonia, temperature ranging from 103 to 104½ and on the third day of the attack I gave 1 c.c. of the vaccine and found a temperature of 102 next morning, when I repeated the vaccine in same dose and on the following morning I found temperature of 100. I repeated the vaccine again and on the morning of the following day her temperature was 99 and continued 99 to 99½ for four or five days, when it reached normal with improvement of all the symptoms, when I dismissed her, but on the second day afterward I was called and found she had had a stroke of facial paralysis which only lasted about twenty-four hours, patient making a slow but good recovery.

Case 5. Mrs. W., age 44, mother of 5 children, developed influenza and four days afterward was attacked by broncho-pneumonia. I used the vaccine as in previous cases and found gradual fall in temperature after each dose until third dose had been given, when temperature reached 99 and remained so for about a week, and this patient also had hemorrhage from nose, stomach, bowels and bladder or kidney, and had two severe attacks of renal colic during her illness, but she made a good recovery.

Now I will not take up any more time nor space in giving details. I will just say that in all I treated nine cases of pneumonia complicating influenza during the recent epidemic and seven of these I treated with this vaccine with recovery in each case and two I treated without the vaccine and both died. But I did not depend entirely upon the vaccine, I used the ordinary remedies generally used in pneumonia, such as expectorants, heart stimulants and tonic with nutritious diet. I also used this vaccine as a prophylactic in probably 75 persons in, I think, about ten of them developed influenza, but not one of them developed pneumonia.

*Read before the Shelby County Medical Society.

Liberation of Antibodies by Foreign Protein.—In rabbits sensitized with streptococci Herrman found that a definite liberation of specific opsonins and agglutinins follows the injection of foreign protein. A similar rise in specific opsonins also occurs in rabbits sensitized with meningococci. Foreign protein injections have no effect on antibodies in typhoid immune rabbits. In suitable rabbits, which do not readily produce lysins against sheep corpuscles, the injection of foreign protein within ten days after the injection of antigen is followed by a marked liberation of specific lysins. A variety of foreign proteins can be used. Human serum, typhoid vaccine, human ascitic fluid, and guinea-pig serum proved equally efficacious.

REPORT OF INFLUENZA TREATED WITH SERUM FROM RECOVERED CASES.*

By Oscar O. Miller, and Wm. T. McConnell
Louisville.

On September 30, 1918, a patient was given permission to go to the city for the purpose of registering in the draft. On October 2d, he came down with a typical case of influenza with the characteristic prostration leucopenia and high continuous fever. Within seventy-two hours those patients sharing the locker room with him came down with typical cases of the same disease.

Cultures from the nose and throat revealed a gram positive, non-capsulated diplococcus. Blood cultures were negative.

Within a short time a number of children came down with the infection; of which the following two showed grave symptoms.

J. R., age 8, became ill October 16. 1918. Temperature October 16, 99.6 to 101.4; October 17, 98.6 to 102; October 18 to 20, 101.4 to 103.6.

During the latter part of his illness he was in a muttering delirium. Upon re-examining the child on October 20th at 5:00 p. m., a well defined pneumonic area was outlined over the left base posteriorly. An injection of serum from one of the recovered cases was ordered and Dr. McConnell immediately withdrew sufficient blood from a recovered case, Mr. P., giving a negative Wassermann, from which he secured 6 c.c. of serum. This was injected that evening. The next morning the child was normal and continued so till the 26th when his fever rose to 100 but quickly subsided and continued normal. His recovery was uneventful.

As we had another desperately ill child (W. H., age 11), whose fever had been ranging from 101 to 104 from October 17th to October 21st; we decided to try serum therapy in his case. Upon careful re-examination no pneumonic areas were observed, other than the tuberculous involvement recorded at previous examination. On October 21st about 8 c.c. of serum from a recovered case with a negative Wassermann was injected subcutaneously.

The following day, October 22nd, the child showed a decided improvement in his general condition. His temperature for the succeeding days being as follows:

October 21, 102 to 104.4, 8 c.c. of serum injected; October 22, 98 to 101; October 23, 98 to 102.4; October 24, 99.4 to 99; October 25, 98 to 98.6; October 26, 99.4 to 98.6.

This child continued to run a normal temperature and made an uneventful recovery.

The following case was seen in private practice by one of us (W. T. McC.): Mrs. R. H., age 25, weight 190; came down November 20th with typical symptoms of epidemic influenza, confined to bed three days, relapsed November 26th.

November 26th, temperature 104, pulse 120, respiration 30; November 28th, temperature 105.6, pulse 135, respiration 35. The patient gradually grew worse and began to show some cyanosis and later became semi-comatose. Examination failed to show any distinct lobar pneumonia.

On Friday November 29th, 40 c.c. of blood was drawn from two members of the family who had been convalescing six days from influenza; one of whom had had broncho pneumonia. On Saturday the patient had fever 105.8, pulse 130, respiration 35. At 1:00 p. m. 1 c.c. of serum was injected subcutaneously; by 2:15 the fever dropped to 103.8, pulse 125 and respiration 30; by 8:00 p. m. the fever, pulse and respiration returned to their former heights.

Then 12 c.c. of serum was injected; the next morning, December 1st, the patient showed a decided improvement with a temperature of 100, pulse 98 and respiration 26. Two days later the fever rose to 101.5, but returned to normal as soon as free purgation was obtained; from then on the recovery was steady and uneventful.

In view of the fact that J. H. had been ill five days in all before receiving the serum and that the latter part of his illness was complicated with a lobar pneumonia; and since resolution may occur anywhere from the sixth to twelfth day; we are not inclined to lay much stress on the value of serum in this case, as it may have terminated naturally by crisis.

In the case of W. H., there was no evidence of pneumonia, his very decided improvement dated from the injection of immune serum; and the decline in fever was by lysis. We are therefore inclined to believe that serum therapy was of value in this case.

In the case of Mrs. R. H., we may be dealing with a concealed pneumonia as she was very fleshy, weighing 190 pounds and it was difficult to obtain the classical findings of lobar pneumonia; the only findings being those of congestion. Her improvement began on the eleventh day of her illness or the sixth day from her relapse which is suggestive. Her improvement, however, was so spectacular that

*Read before the Jefferson County Medical Society.

we believe it was influenced by specific serum therapy.

CONCLUSIONS.

1. We feel that the number of cases reported are too few to be of definite value.
2. That the injection of serum from recovered patients into desperately ill cases infected with the same organism, is logical and is of some value.
3. That this mode of treatment lends itself readily to such widespread infections as the recent pandemic of influenza.

SOME LESSONS LEARNED FROM THE PRESENT EPIDEMIC OF INFLUENZA.*

By H. T. Crouch, Bardwell.

Within the last five months we have had almost numberless reports from the various cantonments, camps and hospitals in the United States and Europe on the most world-wide epidemic of influenza that has ever been recorded.

The reports have differed in certain sections of the country in regard to clinical symptoms, complications, sequela, fatalities and etc. But these differences can be explained to some extent, according to section reported on, climate, overcrowding in hospitals, sanitation in general and so on, which had much to do, it seems, with the severity of the infection in some sections rather than a difference in its etiology.

In 1890 to 1893, this country was visited by an epidemic which we called "la grippe." While a majority of those infected presented respiratory symptoms there were numerous cases minus these respiratory symptoms and presented general aching pains and prostration out of all proportion to fever and other symptoms. This was termed the nervous form of la grippe.

In the present "so-called influenza" epidemic the nervous form while often seen has not been noted so frequently as in the former epidemic, but it has occurred often enough to recognize it as the same toxic effect on the central nervous system as that of la grippe.

The present epidemic presented several peculiarities not observed in former epidemics. The southern portion of our country got the infection some two or three weeks before we, the central part, were scarcely touched by it, although travel and traffic by railroad, automobile and etc., were proceeding in a normal way. When our district reached the crest of the wave the first district affected was ready to open schools, churches, etc. The infection seemed to loom up in one district, reach its height in two or three weeks, then rapidly subside, while another district was being hard hit by it.

About the time we thought our county almost clear of it, another wave swept over the entire county. Not so severe as the first one; and we are still having the infection to appear or reappear in localities here and there in different districts of the county—some six months since its first appearance.

We also noted that the very young and old people were seldom infected—mostly those between the ages of ten and fifty years being most suseeptible, and then, too, quite a number within these ages, entirely escaped the infection, although many of them were constantly exposed to some who were seriously afflicted with it. I cannot account for this apparent immunity, nor can I explain why some have suffered a second attack after having had a complete recovery from a previous attack.

We have also noted that all members of some families, consisting of five to eight persons, would come down with the infection almost within twenty-four hours when in other families of about the same number only two or three would be infected, and there would be three to six days intervals in their attacks.

The clinical symptoms also varied in different cases. The attack, usually abrupt, with with chilly sensations, more or less aching pains from head to foot, soreness of muscles, even the skin, general prostration, temperature varying from one hundred to one hundred and five F., pulse slow, usually not in proportion to fever, eighty-five to one hundred per minute, pharyngitis, laryngitis and bronchitis with cough, painful and dry, or frequent, and often bringing up large quantities of mucus, often with blood, nose bleed was frequent.

In the non-respiratory cases or nervous types, the aches and pains were of all grades from common myalgias to pleuritic pains up to those simulating spinal meningitis. Some were true meningitis. Nausea and vomiting was seen in many cases, and diarrhea, and in some dysenteric or bloody mucus-stools were noted. These symptoms were often seen on first visit within twenty-four hours of the onset of infection. The various complications seen is not within the scope of this paper. There is no doubt that many had the infection who did not call in medical advice.

The bronchial rales with mucus and bloody sputa and severe pleuritic pains caused us to worry very much, fearing pneumonia, but in most of them these symptoms began to clear

*Read before the Carlisle County Medical Society.

up in two to three days and other symptoms to also improve.

Dr. W. F. Boggess, of Louisville has an article in the February 1st, 1919 issue of the KENTUCKY MEDICAL JOURNAL, and I think we should put it on file for reference. He said, "The early clinical symptoms can be positively made on the presence of fever, myalgic pains, and the peculiar appearance of the throat." He says further, "When seen early, the throat shows the same picture in every case. The fauces and faucial pillars are much reddened, the uvula is slightly edematous, and the entire throat is covered with a dirty-looking mucus: of course in the later stages other symptoms develop." He also quotes Dr. Alexander Johnson, at Camp Taylor, that he based his diagnosis upon two factors, first, fever, and second the peculiar appearance of the throat."

I have noted the same condition in the throats of some patients, but Dr. Boggess is the first writer to call my attention to it as a diagnostic symptom.

Some of the adult patients seen on the second or third day would show membranous patches on fauces or tonsils resembling late stages of diphtheria. Some patients presented symptoms of malarial fever in that, a rise of fever, aches and pains, profuse perspiration, a fall of temperature, and then repeat of same symptoms each day for three or four days, and then convalescence. I observed many peculiar symptoms due, most likely, to the mental attitude of some patients, who when told they had the "flu" would immediately take on hysteria in all of its shades.

In the treatment—isolation of patient, early to bed, well protected from draughts, but plenty of fresh air. Treat the symptoms, bathe with cool water for high fever, mild laxatives as required, an opiate cough mixture, in the respiratory cases is usually required. The aching pains require antipyrin or phenacetine or aspirin and some even morphine. In those cases attended with much secretion of mucus or blood from bronchi, and also those nervous cases with prostration, atropia seems to be the best remedy. Strychnine, quinine, digitalis, ammonia and whiskey as indicated in certain cases when fever is low with rapid pulse and general prostration is very useful. Calcium iodide and carbonate creosote is also useful.

While fever is on the diet should be light, milk, soups, juices of fruits and plenty of water to drink.

As to the vaccine treatment, I have had no experience. The reports on its merits are both pro and con. Evidently it has not proved to be a preventive, nor a very valuable curative remedy as yet. It is to be hoped that it will be worked out to be a dependable prophylactic as well as a curable one.

In conclusion, I am aware that I have told you nothing new concerning this mysterious epidemic of so-called "influenza" which has been the cause of thousands of deaths and untold suffering of hundreds of thousands of others, the end of which is yet to be recorded. I have simply given you some of my personal observations.

SURGERY OF THE GALL-BLADDER.*

By JNO R. WATHEN, Louisville.

In presenting a paper before a society composed, as is this, of men in general practice as well as the various specialties, I will attempt to discuss those phases of the subject which concern the internest most in his advice to patients upon whom he has made a diagnosis of gall-bladder disease. There is a great tendency on the part of even the laity, to insist that the surgeon remove the gall-bladder if he operates upon this organ, having heard of some other patient upon whom more than one operation for gall-stones was performed. They are quick to catch on to the newer ideas in our profession and even become more extreme than the most radical of surgeons. They as well as the profession, are fast getting the idea that the gall-bladder is like the appendix, better out than in. In this way the pendulum might possibly swing too far.

Surgery of the gall-bladder is a subject very wide in its scope and presents new features both in pathology and treatment.

While operations upon the gall-bladder have been practiced for more than twenty-five years with considerable success, we are now realizing the cause of our failures in the past, to permanently cure many cases diagnosed as diseases of the gall-bladder and its associated ducts.

When we undertake a discussion of the surgical diseases of the gall-bladder and the pathological conditions in the closely allied organs as the liver, the bile-ducts and the pancreas, we should first of all have some clear conception of the pathology and the methods of the infection. It has been said that the gall-bladder in man is an important organ but not a vital one and this latter statement may apply equally to other organs in the human anatomy.

Infection of the gall-bladder has been considered to occur by three methods, namely, the common duct, the portal circulation and

*Read before the Jefferson County Medical Society.

lastly the most important and probably the only real route, the systemic circulation.

The catarrhal infections are claimed by many not to exist and that all infections of the gall-bladder are interstitial through the systemic circulation.

This later view has been advanced by Rosenow of the Mayo Clinic.

In the early days of gall-bladder surgery we always looked for the classical symptoms of the sharp, shooting pain in the region of the gall-bladder and this condition becoming chronic, we expected the symptom of jaundice.

If, at this time, we wait for some such classical symptoms to occur in every case to be operated upon, we would not be able to obtain the brilliant results of the present day surgery.

Chronic indigestion has long been a stumbling block for the internist to treat and with a better knowledge of pathology we are fast realizing that there are many factors which enter into the causation of chronic dyspepsia. Gastric and duodenal ulcer and also chronic appendicitis are capable of producing digestive disturbances as well as diseases of the gall-bladder and bile ducts.

The pancreas in its association with diseases of the biliary duct has also come in for its share of attention. In the early days of biliary surgery we were always satisfied if we could show the patient the gall-stones removed, and were greatly chagrined if at the operation there were none found. These cases were then drained the same as if we had found gall-stones and a marked improvement took place, but the patients sooner or later in a few months or years returned to us with symptoms as before the operation.

It has been estimated that probably 50-70 per cent. of patients operated upon for diseases of the gall-bladder remained well if the gall-bladder and ducts were explored and drained and it is the other 30 to 50 per cent which we have failed to cure that return to us, that deserve our greatest consideration.

With a recognition of such diseases as chronic pancreatitis and papillomas of the gall-bladder, commonly called strawberry gall-bladder, we have realized that something more than the mere opening of the gall-bladder is needed. In those cases of chronic pancreatitis prolonged drainage is absolutely essential to produce a cure, while in strawberry gall-bladder to simply drain the bladder is only temporary relief, and we are forced to do a more radical operation of cholecystectomy, that is, complete removal of this organ.

While cholecystectomy is not a new operation it was in the past considered one of extreme difficulty and was accompanied with a high mortality. This was due in part to our lack of knowledge of certain pathological principles involved in gall-bladder surgery and the mechanical technique employed. It is an undoubted fact that cholecystectomy produces a greater shock to the patient and is a more serious surgical procedure than a simple drainage of the gall-bladder.

It is also a fact that there are certain gall-bladders and certain pathological conditions existing at the time which render complete removal of the gall-bladder impossible at the primary operation and we should delay this procedure until the patient is in better condition at a subsequent time. While there are certain well defined indications for its removal, there are, nevertheless, border line cases where surgeons of wide experience differ as to what is the best procedure.

In the hands of men of broad experience and good judgment the proper method for each individual case will always be selected, but if we advocate cholecystectomy as a routine procedure for the average surgeon, we will find that our immediate mortality will probably be alarmingly high. There are many cases on record where one surgeon has removed the gall-bladder and when the patient returned for operation to another surgeon for chronic jaundice, it was found that the first surgeon in his eagerness to remove the entire gall-bladder had even ligated not only the cystic duct but embraced in his ligature a part or the whole of the common and hepatic ducts. This mistake should not occur in the hands of a careful operator and it is only possible in the presence of a mass of adhesions when the operation is done by the most skillful.

I, therefore, believe that we should use great care and caution in doing cholecystectomy and where there is an element of doubt we should resort to the simple procedure of cholecystotomy or mere drainage of the gall-bladder. Moynihan has well outlined the indications for operation of cholecystectomy, when he says it should be done under the following conditions:

1. In injury to the gall-bladder, rupture, stab or bullet wounds.
2. In gangrene of the gall-bladder.
3. In phlegmonous cholecystitis.
4. In membranous cholecystitis.
5. In chronic cholecystitis with dense thickening of the walls of the gallbladder and cystic duct, with or without stenosis of the cystic duct, and in chronic cholecystitis, when the gall-bladder is shriveled and puck-

ered and universally adherent. In such cases it is no longer a receptacle for the bile.

6. In distension of the gall-bladder, hydrops of emphyema, due to blockage of the cystic duct by calculus, stricture, growth, or external inflammatory deposits; or in cases of mucous fistula following operations for these conditions.

7. In cases of fistula between the gall-bladder or the cystic duct, on the one hand, and the stomach, duodenum, or colon, on the other.

8. In the multiple ulcerations of the gall-bladder, or the cystic duct, when the gall-stones have eroded their way through the walls into the liver, the duodenum or other protective adherent masses.

9. In primary carcinoma of the gall-bladder.

10. In condition known as the "strawberry gall-bladder."

With the technique usually employed in removal of the gall-bladder there is a great tendency on the part of the average surgeon after he has ligated the cystic artery and duct and removed the gall-bladder, to overlook a careful exploration of the hepatic and common ducts. Unless a probe is introduced into the cystic duct and passed up into the hepatic duct and likewise into the common duct, it is impossible for us to know whether calculi are present or not, and I make it an invariable rule in every case where I remove the gall-bladder to explore the ducts.

I have also noted in these cases where the cystic duct was tied and no bile allowed to drain, we had a slow and tedious convalescence compared with the older operation of drainage of the gall-bladder alone, and recently I have made it a practice in many cases to place a small catheter in the stump of the cystic duct to allow drainage for several days after the operation, when doing a cholecystectomy.

It has always occurred to the writer that if drainage was so valuable in the old operation where we left in the gall-bladder, it should certainly be of equal value for the cure of infection which involved the ducts and liver after the removal of the gall-bladder.

Mayo has recently observed that, "Although man has a gall-bladder, there are several animals, including the deer and horse, that have none. It is stated that such animals have somewhat larger ducts, a condition proved clinically to occur in man and in animals after the removal of the gall-bladder, (Mann). There are about thirty instances of failure of development of the glands reported in man; also it is often found that certain persons have had cystic, shriveled, or functionless gall-bladders for a long period preceding the operation. As to the usefulness of the gall-bladder, some claim it is an unnecessary or obsolete organ, and others that it is a disappearing one. Others claim that the mucus added to the bile from the gall-bladder is of functional importance, and renders the bile less irritating to the ducts of the pancreas should it enter them."

It is now very generally appreciated that the determinating factor in biliary disease is infection of the gall-bladder, its walls, or bile ducts, and this is the main thing to treat in attempting to cure this disease, and the gall-sones, if present, being only secondary to this previous infection.

If anything can be done by medical means it should be the treatment of this early infection, and not the medical treatment of the gall-stones themselves. These latter should in every case be removed at the earliest possible moment. Surgical intervention in the presence of acute infection should be delayed until the subsidence of the more acute symptoms, as the risk is much greater at the height of the infection.

If we wait until gall-stones are positively diagnosed by the Roentgen Ray, we have delayed longer than we should. Where there is an element of doubt as to the exact diagnosis as to the surgical condition in the upper right quadrant of the abdomen, and where after our modern means of research and diagnosis we have failed to differentiate between gastric and duodenal ulcer or gall-bladder disease, we should not hesitate to make an exploratory operation with a view of instituting treatment at the earliest possible moment for the benefit of our patient.

The mortality in the hands of experienced operators for simple exploration is so extremely low, and its diagnostic possibilities are so great that the writer can see no reason for hesitation in advising early exploration in doubtful cases.

One author (Moynihan) has recently written, "Surgeons of the largest experience will from time to time make mistakes—will remove a gall-bladder that would perhaps have been better left; or will leave a gall-bladder that should have been excised. If a mistake is to be made, it is better to leave a gall-bladder that some one may later take away, than to remove one which no one can replace."

DISCUSSION:

Chas. A. Lucas: I do not believe that the general practitioner is so much to blame. I think the great majority of us insist on patients whom we suspect to have gall-bladder disease, being operated on. Dr. Wathen touches on that point.

I have had patients who refused operation because a friend was operated on for gall-stones and this friend did not get well. Then there is another thing: When a patient dies in a hospital, the report has death due to gall-stones. Those people in whom a diagnosis of gall-stones is made remember those cases. I believe in the last few years with the development of the X-ray, the fluoroscope, it is possible to make a diagnosis of disease of the gall-bladder with pretty fair accuracy. I have explained to patients that gall-stones itself is not a disease, that it is simply the effect of disease just exactly the same as the man with a black eye. While it shows for five or six weeks after he meets with the obstruction that causes it, it becomes practically painless in that time.

The fluoroscope and Roentgen plate have played an important part in finding adhesions of the duodenum, changes in the position of the stomach with a history of lots of gas and the usual syndrome.

In gallstones disease we very often find it difficult to convince the patient that nothing in the way of medicine will go good.

But I believe the main trouble in this talk about secondary operations. I am glad it came up to-night. I am interested in the question of cholecystotomy and cholecystectomy. So far as my observation goes, I believe the patients who have a cholecystectomy get along well. I remember a paper Dr. Mayo read reporting a number of cases the last year or two. The paper showed a great increase in the removal of gall-bladders as compared with drainage of the gall-bladder. I believe we are getting the public educated to the point that inflammations of the gall-bladder are to be regarded the same as inflammation of the appendix. If we can keep this secondary operation away from them, as well as the ordinary gallstone report in the paper, I think we will have a great many more operations come to much greater success.

A. D. Willmoth: I am sure that all of us for a number of years left gall-bladders in place that should have been removed. I am quite sure that the gall-bladder to-day is neglected longer before it is decided it is a surgical case than any other removable organ. Sometimes it is a number of years before a case is classed as surgical. Such condition with an appendix would have been relegated to the surgeon long before the gall-bladder is turned over to him.

I believe it has been conclusively proved that the recurrences you have are true and false. In other words, the true recurrences are those which take place due to conditions left behind following operative work, where stones are overlooked, or where infection exists and re-formation of stones takes place. The false recurrences, as we might call it, are those in which pains are referable to the gallbladder which are diabetic in character. I have one such case at the present time. I have a woman who had recurrence after cholecystectomy. On examination there was a 4-plus Wassermann. This woman had pains referable to the gall-bladder region which unquestionably are due to leutic infection as they were relieved after treatment and returned after leaving off treatment. She herself does not believe she is syphilitic.

These conditions are the forerunners of, or precipitate, cancerous conditions, then the presence of stones or presence of infections tends to the formation of cancer in the gallbladder which should be removed. If the gallbladder is removed I am sure that most or all of the cystic duct should be removed with it. If not, you leave behind a stub which may dilate and give trouble at a subsequent time.

Dr. Wathen referred to one very important point. That was the question of determining—by the method of passing a probe in each direction—if the ducts are open. Some months ago I was at Rochester watching William Mayo and, observing that he did not probe the duct, I asked him if he very often probed the duct. He told me he did not, that it was rather an unusual thing for him at that time to probe a duct. He didn't probe any during the entire time I was there.

It did seem to me there was a possibility, even a probability, that there could be many stones left behind in the hepatic duct. Deaver has proved this in cases where he has opened the gall-bladder in cases where he has seen small stones pour out of the hepatic duct and pour out in the dressings. I can see no reason why anyone who does that should not leave behind stones in the hepatic duct which will later give trouble. Personally, I follow Dr. Wathen's procedure, probe the duct to see if there is any obstruction there. Stones can easily be left behind unless this is done; this may not be true in the hands of Mayo, but I am sure the average man might overlook stones. They would be classed as recurrences.

I think one of the things Dr. Wathen referred to demands more attention than it gets at the present time. That is, attention to the pancreas. Practically all of the pains that are referred to the right scapular region are due to pancreas and not due to the gall-bladder itself. This has been proved by a number of observers who have watched and examined carefully. The question of drainage for the purpose of restoring the pancreas to normal condition is an important one. The American Medical Association at its last meeting had a paper in which a summary of cases was given, in which more than ten per cent of the so-called recurrences involving a second operation was due to a condition that possibly

had originated within the pancreas, that kept up such a continuous irritation that subsequent operation had to be done and some form of drainage provided.

I think it important that the stump should be drained, either in the form of a straight catheter sewed into the stub of the cystic duct, or a tube, one end in the hepatic duct and one end in the common duct, and the tube end of the T brought out through the abdominal incision. This will enable the operator to drain the ducts as long as he cares to. Deaver sometimes leaves them in for four or five months. I was afraid the rubber would deteriorate, although he assures me he left them for that length of time. I do think that drainage for a number of weeks—much longer than the average gall-bladder is drained—is essential to restore the pancreas as much as possible to its normal condition.

John R. Wathen: I did not present this paper to-night merely to give my own experience. I wanted to get the experience of men who do this work, because we are changing constantly. I know, right after Mayo's paper I did more drainage cases, of course, than removal. I realized that removal of the gall-bladder was the proper thing. But I am not quite ready to accept the theory that we should remove every gall-bladder seen. My paper is not a positive paper to date. I take out about 60 per cent of the gall-bladders, and drain about 40 per cent.; I think possibly that is the best.

But there are certain fallacies which have crept into the profession which I think should be be corrected. Dr. Finney of Johns Hopkins has made the statement that all cases of cholecystectomy were troubled with diarrhoea. In my observation in these cases reported here, there was not a single case of diarrhoea. In fact, the tendency is toward constipation.

I am especially interested in this subject, not only from following it up, but from the fact that I have had my own gall-bladder removed. I know the experience before and afterward; it is about the best way to get symptoms.

Don't get the idea that removal of the gall-bladder is going to cure you. I believe that in the majority of these cases the trouble is not in the gall-bladder, but that the primary infection is in the ducts, the sentinel glands on the common duct and on the hepatic duct being more plentiful than on the cystic duct or the gall-bladder. Very few are found in the gall-bladder. The lymphatic glands indicate a pathology somewhere. Some foreign operators have called attention to aspirating for bacteria; if they find there is cholangitis there they believe there is infection all through that liver.

I take the position here to-night—and also took it in a paper before the Southern Medical Association meeting at Memphis where a number of men discussed the paper—that we should drain the cystic duct in order to relieve the cholangitis and the infection of the duct and not so much the gall-bladder. Go up into the ducts, into the livers; go further; if you would have 90 per cent of cures you must go further than the gall-bladder to get the result. That is the point I make. I have never seen anybody make it quite that strong.



Corper and Downing report the results of the clinical bacteriological and pathological work made during the influenza epidemic at Base Hospital No. 16, a hospital for the tuberculous, New Haven, Connecticut. The influenza bacillus was found in the nose and throat of 14 per cent. of normal individuals, without symptoms of influenza; in 28.5 per cent of patients with influenza; in 24 per cent of consumptives without influenza; and 62 per cent of consumptives with influenza. In typical, uncomplicated cases of influenza, the bacillus was found in the sputum in 75 per cent.; and in 10 per cent. in cases with broncho-pneumonia. In the sputum of influenza patients the bacillus was commonly accompanied by some other organisms, most frequently by the pneumococcus (types I, II, III, or IV) or streptococcus. The bacilli can be carried for several weeks by people who have not had influenza. They are found more often in the sputum and seem to prefer the lower respiratory tract, thus differing from the ordinary acute cold organisms. Blood cultures were uniformly negative for the influenza bacillus. Leucopenia or a normal leucocyte count was the rule during the first three days of the disease, after which an occasional leucocytosis was found. Necropsey on eleven cases of influenza bronchopneumonia (seven of which were tuberculous) showed the influenza bacillus in the lungs in ten cases and the pneumococcus in eight. Influenza bacilli were never found in the blood at autopsy, but pneumococci were found in three of seven cases examined.



NEWS ITEMS AND COMMENTS

The Physicians' and Surgeons' Adjusting Association, of Kansas City, wishes to call the attention of physicians in this field to the fact that they do collect old accounts. This Journal has accepted their advertisement, which will be found on another page of this issue, and any business transacted with this company will no doubt be entirely satisfactory to those who have dealings with them.

Dr. Theodore D. Finck died suddenly following an infection of his finger, on March 22, 1919, after a brief illness. He was thought to be doing nicely and had arranged to be removed to his home from the Norton Infirmary.

Dr. Finck was a native of Louisville and was born March 9, 1863. He graduated from the Kentucky School of Medicine in 1882 and spent some time in the European clinics. He was unmarried and is survived by a brother and a sister.

Dr. Finck was always a busy practitioner and was a great lover of horses, being ont of the last physicians to adopt the automobile in his practice.

Dr. Dunning S. Wilson has been promoted to the rank of Lieutenant-Colonel. Dr. Wilson has been stationed in Treves with the Army of Occupation, but has been transferred from the Rainbow Division and is now organizing hospitals and supervising the distribution of food to school children. Dr. Wilson was formerly the

head of the Waverly Hill Tuberculosis Sanitarium.

Lieut. Carroll P. Price, who is with the medical division of the Army in France has been promoted to Captain. He was recently awarded the Croix de Guerre. He is the son of the late Dr. A. D. Price, of Harrodsburg.

Lieut. W. E. Render, formerly of the staff at Lakeland, is now stationed at Fort Benjamin Harrison in the Psychiatric Hospital.

"The Bacteriological Laboratory of G. H. Sherman, M. D., Detroit, Mich., Manufacturer of Bacterial Vaccines is in need of a detail man for the states of Kentucky and Tennessee. In replying give full details as to qualifications, experience, age, salary, etc. Resident of territory mentioned preferred.

At a meeting of the medical societies of Gallatin and Carroll Counties, held on March 18th, 1919, the following resolutions were unanimously adopted on the death of Dr. Nicholas Brown:

Whereas, in the natural course of human events our friend and brother practitioner, Nicholas Brown, M. D., has been called by our merciful Father from his labors among us to his final rest and reward in Heaven.

Therefore, be it resolved,

That we hereby testify our high appreciation of the noble qualities that distinguish Dr. Brown as a true physician, an earnest and zealous Christian, a faithful friend, a thorough gentleman of the old school, and a loyal citizen.

Resolved, That we hereby tender to the bereaved family of Dr. Brown our sincere sympath in their great affliction;

Resolved, that a copy of these resolutions be sent to the county papers for publication and a copy to the family of our deceased brother.

ALLEN DONALDSON,
W. B. MESSINK,
F. M. GAINES,
B. L. HOLMES,
S. B. ROBINSON,
P. V. ELLIS.

Lieut.-Col. R. Julian Estill, of Lexington, who has been in France at the head of the largest base hospital in Europe for more than a year, reached home April 1. Lieut.-Col. Estill was commissioned a Major in the Medical Corps and assigned to a unit formed in New York, and after several months near the front was placed in charge of the unit and given supervision over the largest medical force of any country engaged in the war. His hospital unit followed the front as it drove back the enemy, and was in the line of fire for a part of the time during the summer of 1918.

Maj. Julian T. McClymonds, of Lexington, has been promoted to the rank of Lieutenant-Colonel in recognition of his overseas service.

Col. McClymonds went to France with Base Hospital Unit 40, and while his unit was located in Salisbury, England, he was chosen for special duty in the zone of advance. He was attached to Base Hospital 40 from Richmond, Va. This unit was an evacuation hospital with thousands of patients daily.

Since the armistice Col. McClymonds has visited the battle scenes of the great victories of the American army—Chateau Thierry, the Marne, Verdum, Sedan and the Argonne.

Base Hospital 40 is stationed at Camp Merrit, N. J., but will be sent to Camp Zachary Taylor for demobilization.

We are sure the many friends of Major R. W. Ogilvie, of Princeton, County Health Officer of Caldwell County, and Captain Charles B. Kobert, of Lebanan, County Health Officer of Marion County, will be glad to know that they have been mustered out of service and are again at their posts of duty. The Journal gladly welcomes the return of all of our physicians.

During March the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Swan-Myers Company: Swan's Mixed Acne Bacterin (No. 41); Swan's Pertussis Bacterin (No. 38) (Prophylactic); Swan's Mixed Furunculosis Bacterin (No. 39); Swan's Typhoid-Paratyphoid Bacterin (No. 42) (Prophylactic).

Maj. Philip H. Stewart, Paducah, of the United States Medical Reserve Corps, has received a promotion to Lieutenant-Colonel. Recommendations had been filed with the Adjutant General for several months. Col. Stewart is recognized as one of Kentucky's ablest surgeons and has advanced in a short time from Captain to his present rank.

Criminal Abortion.—The woman succumbed to what seemed to be a combination of hemorrhagic nephritis, peritonitis with urobilinuria suggesting pathologic conditions in the liver, blood in vomit and stools and psychic changes, with terminal uremic coma. Enough oleum sabinae was found in the cadaver to explain the fatal nephritis and probably the abortion, as the woman confessed to taking it for that purpose.

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NEXT MEETING, ASHLAND, KENTUCKY.

COUNTY SOCIETY REPORTS

Calloway—The Calloway County Medical Society met April 3 in the office of P. A. Hart, and the following officers were elected for the ensuing year:

C. O. Gingles, President; R. Keys, Secretary; P. A. Hart, Delegate.

Every doctor in the county but three were present and we had a dandy meeting. You may look for a good year from us.

P. A. HART, Secretary.

Daviess—The Daviess County Medical Society met in the New City Hall Owensboro, on Tuesday, March 18th, 1919. Twenty-four members were present, J. L. Carter, the president, presided.

F. S. Clark, of Rome, made application for membership.

The death of J. W. McCarty, one of our old members, was reported. A committee consisting of J. W. Ellis, A. McKenney and H. K. Orsburn, was appointed to draft suitable resolutions and report at the next meeting.

H. K. Orsburn read a paper on "Rheumatism" and reported four cases.

Jacob Glahn, Townsend, McKinney, Clayton and Thorpe, discussed the paper.

H. M. Walker read a paper on "Bronchial Pneumonia," which brought out quite an interesting discussion.

J. M. Clayton had a young woman with her first baby, now several weeks old, who had absolutely no milk in her breast at any time.

Ed Barr read a paper on "Examination for Tuberculosis," as practiced in the army. The paper was quite an interesting one, and elicited an animated discussion. Those taking part in the discussion were Osburn, Ellis, Gilmore, McKenney, and Connor.

J. J. RODMAN, Secretary.

Fayette—At the annual meeting of the Fayette County Medical Society the following officers were elected:

Woolfork Barrow, President; L. C. Redmon, Secretary-Treasurer.

Dues from sixty-three members were collected and the society adjourned after a very interesting meeting.

L. C. REDMON, Secretary.

Graves—At the annual meeting of the Graves County Medical Society the following officers were elected:

W. S. Hargroves, President; L. L. Wright, Vice President; H. H. Hunt, Secretary-Treasurer; J. L. Dismukes, Delegate; G. T. Fuller, Alternate.

Sixty members have paid their dues and ar-

rangements have been made for a big meeting, fine program with luncheon, April 23.

H. H. HUNT, Secretary.

Hopkins—The following officers were elected to serve for the ensuing term:

J. A. Strother, President; W. M. Hammack, Vice President; C. E. O'Bryan, Delegate; T. L. Bailey, A. L. Thomson, Censors; C. R. Morton, Secretary-Treasurer.

Twenty-one members paid their dues.

C. R. MORTON, Secretary.

Jessamine—The following officers were elected at the annual meeting of the Jessamine County Medical Society:

T. R. Welch, President; D. A. Penick, Vice President; J. A. VanArsdall, Secretary-Treasurer; T. R. Welch, Delegate; W. H. Mathews, D. A. Penick, Censors.

J. A. VAN ARSDALL, Secretary.

Jackson—The following officers were elected at the annual meeting of the Jackson County Medical Society:

J. W. B. Hornsby, President; R. E. Bartlett, Vice President; G. C. Goodman, Secretary; R. M. King, Treasurer.

The society promises to do good work for the year with regular meetings and good attendance.

G. C. GOODMAN, Secretary.

Lincoln—At the regular meeting of the Lincoln County Medical Society, the following officers were elected:

Lewis J. Jones, President; W. J. Childress, Vice President; D. B. Southard, Secretary; W. J. Edmiston, E. J. Brown, W. B. O'Bannon, Censors.

D. B. SOUTHARD, Secretary.

Mason—At a meeting of the Mason County Medical Society, held Friday, April 11th, 1919, the following officers were elected:

J. H. Hutchings, President; G. L. Howard, Vice President; P. G. Smoot, Secretary-Treasurer; L. H. Long, Censor for Three Years; A. R. Quigley, Delegate to State Meeting.

Next meeting of the society will be held Friday, April 25th, 1919, at 8 P. M., at the office of the County Health Officer.

A. O. Taylor, A. R. Quigley and **G. L. Howard** will read papers at this meeting.

P. G. SMOOT, Secretary.

Marshall—The Marshall County Medical Society met on February 19th at Benton, Kentucky, members present, were Drs. E. G. Thomas, W. T. Little, E. D. Covington, L. L. Washburn, V. A. Stilley and F. M. Travis.

The minutes of the last meeting were read and approved.

On account of the influenza epidemic the society had held no meeting since October, 1918, therefore the election of officers was held at this meeting and resulted as follows:

President, R. M. Jones; Vice President, W. T. Little; Secretary and Treasurer, F. M. Travis; Board of Censors. A. J. Bean, E. G. Covington, V. A. Stilley; Delegate to State Medical Society, R. M. Jones; Alternate, V. A. Stilley.

On account of neither of the essayists being present, the old program was continued.

The society adjourned to meet at Benton, March 19th, 1919.

F. M. TRAVIS, Secretary.

Marshall—The regular meeting of the Marshall County Medical Society was held for the purpose of electing officers for the ensuing year, which were as follows:

R. M. Jones, President; W. T. Little, Vice President; F. M. Travis, Secretary-Treasurer; R. M. Jones, Delegate; E. D. Covington, V. A. Stilley, A. J. Bean, Censors.

Sixteen members paid their dues.

There being no further business the society adjourned.

F. M. TRAVIS, Secretary.

Metcalfe—At the March meeting of the Metcalfe County Medical Society, the following officers were elected:

Jas. Taylor, president; P. W. Bushong, vice president; H. R. VanZant, secretary-treasurer; S. M. Bowman, P. D. Harvey, W. S. Sandridge, censors.

After an interesting meeting the society adjourned to meet June 3.

H. R. VAN ZANT, Secretary.

Nelson—The regular meeting of the Nelson County Medical Society was held at Bardstown for the election of officers.

B. E. Gore was elected president; H. E. McKay, vice president; H. D. Rodman, secretary-treasurer; R. H. Greenwell and S. H. Harned, censors.

Seventeen members were present and all paid their dues.

The society adjourned to meet June 18.

H. D. RODMAN, Secretary.

Scott—The Scott County Medical Society met at the City Hall, Georgetown, April 3rd, 1919. Meeting called to order at 11 o'clock a. m., by President Salin, with nine members present.

Charles Vance, of Lexington, read us a most excellent paper on "Fractures of the Lower End of Humerus," in which he advocated the Ashurst method of treatment by hyperflexion. This pa-



per was very interesting and thoroughly enjoyed by those present.

After the reading of this paper and discussing same by those present, we served lunch at the Ford Memorial Hospital, which was indeed a splendid treat to the doctors who did full justice in token of their appreciation for same.

We desire to have a member of the Council to meet with us at our next meeting, which will be Thursday, June 5th, 1919, at the City Hall, Georgetown.

A. N. CRAIN, Secretary.

Taylor—At the annual meeting of the Taylor County Society the following officers were elected:

E. L. Gowdy, President; J. L. Atkinson, Vice President; C. V. Heistand, Secretary-Treasurer; S. H. Kelsey, O. R. Reesor, B. T. Black, Censors.

After a general discussion the society adjourned.

C. V. HEISTAND, Secretary.

Todd—The Todd County Medical Society met at Elkton for the first time April 2nd, 1919. The following members were present: E. T. Riley, President; J. F. Standard, Vice President; W. E. Bartlett, Secretary-Treasurer; E. W. Weathers, B. E. Boone, J. M. Robinson, R. W. Frey, R. L. Cobb, R. L. Boyd, J. R. Crittenden, W H. Forgy,

Every one having been so busy before, this is the first meeting this year, and while we had no pre-arranged program, we had a very pleasant as well as instructive and interesting meeting. to say nothing of the elegant and delicious dinner served by Mrs. Lamb, at the Elkton Hotel. The interest of the meeting was disturbed for a short time, however, by the sound of the Elkton City fire alarm, which was responded to promptly by the city fire department. After the bucket brigade and the members of the Todd County Medical Society had already made a record-beating run and had the fire well under control when the fire department came.

The next meeting of the society will be held at

Trenton on Wednesday, May 7th, that being the anniversary of our distinguished president, E. T. Riley, who has extended a pressing invitation to all the members to be his guests that day and also to invite our Honored Secretary, Dr. McCormack and a member of the Council also to be present.

Let every one get busy now and arrange in time and be with us at Trenton and let us make this one of our banner meetings.

This is the only way to be benefited by the society, and the only way to make the society interesting, alive and prosperous.

W. H. Forgey presented the following resolutions:

Again within the short period of six months, Todd County Medical Society has been called to mourn the loss of another one of its beloved members, Dr. R. L. Roll. Dr. Roll was born in Muhlenburg county forty-nine years ago. He was taken sick on December 27th, and died on December 30th, 1918. His death was due to septicemia. He leaves a devoted wife and a son, nineteen years of age, besides a host of friends. He married a sister of our worthy secretary, Dr. W. E. Bartlett and a daughter of the old veteran of the 60's, Dr. J. W. Bartlett. Dr. Roll was devoted to his family and profession and a hard-worker for humanity.

Whereas, God has seen fit in His wisdom to call our brother from our midst.

Be it Resolved, That this society offer its sincere sympathy to the bereaved family and friends, that a copy of these resolutions be sent to the family and a copy spread upon the minutes of our society.

W. E. BARTLETT, Secretary.

Washington—The following officers were elected for the year:

W. W. Hyatt, President; R. J. Hamilton, Vice President; W. W. Hyatt, Delegate; R. J. Hamilton, Alternate Delegate; J. C. Mudd, J. N. Shehan, W. R. Thompson, Censors; J. H. Hopper, Secretary-Treasurer.

One of our members is still in the army and another has moved.

The society promises to do good work and have regular meetings.

J. H. HOPPER, Secretary.

Histogenesis of Multiple Sclerosis.—The basis of Kingman's investigation rests on four cases of multiple sclerosis. All of the patients were under observation for considerable periods of time and presented sufficient clinical evidence for a positive diagnosis. All of the tissue examined revealed, in general, a uniform histopathology, which is described in detail, but not in toto. The description will be completed in the second paper.

THE FORUM

Republic of Haiti, Public Health Service,
Port Au Prince, February 20, 1919.

Col. A. T. McCormack,
Secretary Kentucky State Board of Health,
Bowling Green, Ky.

Will you be kind enough to send to the address beneath twelve copies of the issue of your Bulletin entitled "Kentucky Sanitary Privy," together with a bill for the same.

It may please you to know that we have built several privies of the Kentucky type both for private and community use, and they have given complete satisfaction during more than a year of use. We have adopted the type as the standard for Haiti.

Very truly yours,

N. T. McLean,
Commander, (MC) U. S. Navy, Sanitary Engineer of Haiti.

Vaccination Against Pneumonia.—The experiments of the Army Medical Corps with vaccination against pneumonia due to the pneumomoccus, Types I, II and III, in two of the Army camps have had so much apparent success that a memorandum has been issued to officers, enlisted men, and employees of the War Department, announcing that this prophylactic vaccination is available to all who desire it. At Camp Upton during a period of ten weeks, no cases of pneumonia due to the types of pneumococcus mentioned, occurred among the vaccinated troops, and pneumonia due to other organisms was only one-tenth as high among vaccinated as among the unvaccinated although previous to vaccination the pneumonia had occurred equally in the two groups. The vaccine employed is a lipovaccine. It is given in a single injection, containing pneumococci, Types I, II and III. Reactions from injections, etc., are, as a rule, less pronounced than after the use of antityphoid vaccination. The vaccination is not intended to cure those who are ill with pneumonia, and it is not advised for persons who are suffering from acute colds or fever.

"In my work I find more young men put out of business and made unfit to become fathers or stand the gaff in the battle for bread because of booze and venereal diseases than all other things combined."—Billy Sunday, New Orleans, La., January, 1919.

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EDITORIAL

A DEMAND AND A RESPONSE.

For many years the doctors of Kentucky have been preaching for better sanitary conditions. They have been urging that the living conditions of all the people be improved. They have been seeking, and have secured, to a remarkable degree, the organized aid of every group interested in the welfare of the Commonwealth. The Federated Women's Clubs have secured for them a tremendous hold on the public mind. The newspapers of the State, with singular unanimity, have given them a forum that has for years been gradually developing increasing demands for better health work. The pharmacists have likewise helped through the food and drug law.

Since 1878 the doctors of Kentucky have practically carried on the public health work without compensation. Compelled to support themselves and their families by the actual treatment of the sick, they have, at the same time, devoted enough time to health work to have made marked reduction in our gross death rate. The statements of the doctors about conditions which affect health have frequently been met with suspicion, many times with frank incredulity. No predictions and no statements ever before made by any profession have had the cruel confirmation that was afforded by the draft examinations for the National Army. That a third of our young manhood were so mentally or physically defective that they were unable to participate in the war for the defense of the liberty of the world, was a tremendous indictment of all the social and economic conditions that permitted it to be true.

As if it were intended to pile Ossa on Pelion in confirmation of the demand for better health conditions, there has swept over the world the terrible pandemic of influenza and pneumonia. This has afforded a startling demonstration of the utter inadequacy of existing health organizations to properly care for the great emergency of such an epidemic. To the thoughtful, however, it has no less startlingly revealed their inadequacy for caring for the ordinary endemics of our every day preventable diseases.

That the death rate in Panama is less than half the death rate in Kentucky, and that the sick rate in Panama is less than a twentieth the sick rate in Kentucky, and that this is as true of every other state as of Kentucky, and that Panama, naturally, is a pest hole, and, comparatively, Kentucky is a paradise, should cause every patriot to seek the reason for all this. It is that in Panama there is an adequate health organization that protects every citizen from diseases which we know how to prevent and promptly cares for every citizen who becomes ill of those which can not be prevented.

And the aroused public opinion of Kentucky will not much longer be satisfied with less. Through the Red Cross, the greatest organization for good the world has yet known, through the Woman's Clubs, through the Farmer's Institutes, through the Public Schools, through the Returning Soldiers, through every agency that is alive and awake in the State, there is a growing demand for such a health organization as will reach the need of the people and so protect them that they may be well.

When is a man well? We have too long permitted the belief to prevail that the sick are only those who are in bed or confined to the house. No man is well who can not do his day's work efficiently and pleasurably, so that he may contribute to the welfare of the race; who can not and does not enjoy his day's play; who has not earned and does not secure his night's repose. The doctors of Kentucky have taught the people that these things are true. They have sowed the wind of popular demand for better health. They must prepare themselves, ere it be too late, to reap the whirlwind that is gathering that they be so

trained, prepared and organized that they may satisfy this demand.

Animated by these ideas, the organized medical profession of the State has demanded of the State Board of Health that it prepare such an organization as will supply all these things. The first result was the passage of the new health law by the General Assembly of 1918. In many respects this is the greatest enactment on public health that has yet been made in any civilized country. It forms the greatest fundamental act for a health organization that has yet been passed in any state. It enables us to have, as rapidly as public opinion in each county demands it, county health departments with a trained executive in control of each, with trained health nurses as assistants, with all the other forces necessary to actually prevent disease.

The intensive health campaign against hookworm disease by the State Board of Health, financed by the Rockefeller Commission for the eradication of hookworm disease and the trachoma eradication by the United States Public Health Service, working under the auspices of the Board, revealed far more than the mere prevalence of these maladies, and that they could be cured. It showed how the interest of the people might be aroused. It showed how easily health conditions might be improved, but it also showed that the mere improvement of health, the mere restoration to a condition of well-being as distinguished from a condition of physical inefficiency was of small value unless other living conditions were improved at the same time. All these things make us realize the need for fully trained, all-time health officials, not only interested in and animated by the public welfare, but actually knowing what public welfare is and definitely knowing how to make public welfare an asset for the individual home and the people who live in it. In response to this demand the State Board of Health has accepted an invitation from the University of Louisville to provide a faculty for a department of the University to be known as a School for Health Officers and Health Nurses. Combined with this will be a school for welfare workers, and, in this school, complete, practical instruction will be offered to physicians who desire to be all-time public health officers, and to registered nurses who desire to be all-time public health nurses and to welfare workers who desire to equip themselves so that they can actually functionate for the good of the people. The trustees of the University of Louisville have approached the matter with a wonderful conception of its importance. They have secured, free of expense to the State, for the Executive Offices of the State Board of Health and for the laboratories and class rooms of the school for health officers, health nurses and welfare workers, the splendid building located at the corner of Sixth and Main streets, in Louisville, formerly occupied by three of the greatest banks of that city, a large insurance company and a business college. It would cost the State $300,000 to secure elsewhere like accommodations. It would be impossible elsewhere to secure like opportunities. The State Health Laboratories will be located at the State University in Lexington and the State University will sympathetically cooperate with the State Board of Health and the University of Louisville in this Health School. The removal of the Departments of the Board from Bowling Green will be gradual but those departments necessary for the conduct of the school will be in Louisville in time for the opening of the fall session this year. Physicians, nurses and others interested in these lines of activity and who desire to take such a course of instruction should correspond with the State Board of Health or the University of Louisville.

The mere fact that this recognition of the evolution in public health conditions will demand great personal sacrifice on the part of some localities in the State, as well as on the part of many individuals most closely concerned, will be noted by every one familiar with the facts with great regret, but neither localities nor individuals have a right to be considered when the welfare of the people of the whole Commonwealth are involved.

THE ASHLAND MEETING.

The meeting of the State Medical Association will be held this year at Ashland, on September 23, 24, and 25. Drs. Kincaid and Moore write that Ashland is the best town in Kentucky. Its reputation for hospitality is very much more than State wide.

The scientific program will be equally divided between those of us who were away from Kentucky in the Army and those who remained at home. The returned medical soldiers will tell what they learned which will be of interest and value to the rest of us; those who remained will tell of developments here which the absentees should know about.

All in all it will be a victory meeting, and the physicians of eastern Kentucky who will act as hosts will expect a large representation from all over the State because they have attended meetings in other sections for many years since they have had one.

THE SCIENTIFIC PROGRAM.

The Kentucky State Medical Association is a democratic organization, and every member has a chance at the program. The only limitation is that those who have been on the program within the past two years are not invited to take part again until every one else has had a chance. The counties not represented in the past two years have first opportunity. Dr. W. W. Anderson, of Newport, will have especial charge of the program this year, which insures its scientific interest. He has suggested the following subjects of interest:

PUBLIC HEALTH PROBLEMS

Control of Venereal Diseases.

Fly Problem in Rural Districts.

Rural Sanitation.

Mobilizing Volunteers for Public Health Work.

Value of the Public Health Nurse.

A LOOK AHEAD

State Health Insurance.

Cooperative Diagnosis and Group Practice.

Tendency Toward State Medicine.

New State Board of Health Organization.

Focal Infection in Relation to:
- The Heart,
- The Bones and Joints,
- The Nervous System,

The Problem of Diagnosis.
- Surgical Treatment.

Cripples and Defectives:
- Reconstruction of the Cripple,
- Education and Training for the Cripple,
- State Care of the Feeble Minded,
- State Care of the Insane,
- Multiplication of the Unfit.

Neurology:
- "Shell Shock,"
- Neuro-Circulatory Asthenia,
- The Underlying Neuropathic State,
- Encephalitis Lethargica.

ROENTGENOLOGY.

X-ray in Medical Diagnosis.

Therapeutic Uses and Limitations of X-Ray and Radium.

If you are interested in any one of these write the Secretary as soon as possible. Please remember if you are not on the program it is your fault if you have anything worth while to say.

THE LOUISVILLE TIMES ON HEALTH WORK.

The *Louisville Times* has the following editorials in recent issues in which every doctor in the State will be interested:

WAR ON THE PLAGUE.

There is great cause for disappointment in the fact as reported by the health authorities of the State that tuberculosis is gaining ground throughout the Commonwealth. Probably the cares and sorrows of the great war had pushed aside less spectacular considerations, but whatever the cause, interest in and vigilance against the White Plague seem to have waned during the last year or so. And the scourge of tuberculosis is just the form of public and individual affliction as is only to be handled through the most energetic and watchful methods.

The health authorities are not and never have been unmindful of their grave responsibility in this matter. Here in Louisville private efforts have been intelligent and useful in the fight on the plague. But there never has been money enough in hand to handle the situation as it should be handled throughout the State; and it really is in the highways and byways that the fiercest fight is needed. If only scattered communities here and there make the effort, the general result can never be of the first importance.

The sociologists and the statisticians have labored long over the economical meaning of the losses of life this country sustains every year because of the ravages of tuberculosis. One time such figures were considered laughable by the ordinary run of people; and even now the enormousness of the economic values so represented are difficult to grasp. But the elimination of this disease from any one State of the Union would more than pay for the fight throughout the Union to eliminate it entirely.

But economic values should be a secondary consideration with the guardians of the public health, just as they are in any individual stricken household. They should bear constantly in mind the needless sorrow and suffering that follow in the wake of the White Plague which are vastly more important, after all, to the individual, than the matter of dollars and cents. The teaching of the ignorant and the heedless how to avoid hitherto hidden perils will carry its own reward for those who take up arms in the battle that is imminent.

As we point out, public health officials are alive to the need for action with regard to the tuberculosis situation, but no matter what

their activity might be, they can achieve no great result except the people take a big, enthusiastic part in the work. The fact that tuberculosis can be both prevented a d cured must be kept before the minds of all the people all the time. The comparative simplicity of the methods by which it is prevented and cured must be eternally publicized also, because in this fact lies the greatest hope that the people will be brought to realize their common peril and the defense against it.

Everybody who can talk and read; and who has the ordinary intelligence required to pass on an idea can become a soldier in the fight against tuberculosis that will be organized by the State Board of Health. And the first aid that men and women can contribute to the cause is to look to the condition of their own health. Let good order and public spirit begin at home; let all persons exercise a high degree of personal care, then they will be ready to look helpfully upon the cases of others. But in any case, there is work for all.

FORWARD FOR HEALTH

Kentucky stands in the moment of a great awakening to her requirements in the matter of public health; and the time is none too soon. The State's great losses due to the scourge of influenza have had the effect of emphasizing that there is not sufficient organization for public health to overwhelm a plague; and organization is to be had. The growth of fatality due to the encroachments of tuberculosis has shown that what has been done in this battle is not sufficient; and more resources are to be organized in this struggle. Kentucky as a general thing is not more backward in the protection of public health than other States, but this fact can no longer be accepted as consolation for the evils we unnecessarily endure—the fight is on.

Perhaps the most important step to be taken in the newly-organized disposition of the forces of health will be the removal of the offices of the State Board of Health from Bowling Green to Louisville. It is with full appreciation of our sister city that this is said. Geographically Louisville is the logical point for home of the State Board. Railroad facilities—including better and faster mail service to all points except those contiguous to Bowling Green—are a big item in the handling of the Board's business; and especially in the case of such epidemics as must be fought in all parts of the State at one time. The size of Louisville and the advantage of being able to spread such propaganda as the Board may think needed from time to time, are points that also must be considered.

The University of Louisville also is preparing to take a big part in the fight for improved public health; and it therefore is well that constant and intimate touch be maintained between the Board and the University. The State Board is to be provided with excellent quarters at no expense to the State; the University is to establish a School for Health Officers and Health Nurses; and Louisville to her great credit probably will be the first city in the United States to be a great center for the training of students who wish to become permanent workers in this field of real promise. Along with the aforementioned school, the University will undertake the training of welfare workers to supplement the efforts of county and State health officials.

Every good citizen of Louisville will be directly interested in the removal of the State Board's headquarters to this city. Even the people of Bowling Green will be able to see—althought they will regret the loss of the department—that the interest of the State will be well served by this change; and having observed the condition of Kentucky's health, will be in favor of any move that will gain quick action in the situation. The plans of the health officials of the State should bring the question of health before all the people; and they should stand ready to take an enthusiastic part in bringing about any changes or improvements public and private that are for the general good. Kentucky can lead the entire country in this movement if every man and woman stands ready to do his or her part.

During the past nearly twenty-one months the American people have given in cash and supplies to the American Red Cross more than $400,000,000. No value can be placed upon the contributions of service which have been given without stint and oftentimes at great sacrifice by millions of our people.

The effort of the American Red Cross in this war has constituted by far the largest voluntary gifts of money, of hand and heart, ever contributed purely for the relief of human suffering. Through the Red Cross the heart and spirit of the whole American people have been mobilized to take care of our own, to relieve the misery incident to the war, and also to reveal to the world the supreme ideals of our national life.

The Harrison Act—As amended by the new War Revenue Act, will be mailed postpaid to any druggist, physician, dentist or veterinarian who will send a postal request therefor to "Mailing Department, Parke, Davis & Co., Detroit, Mich." Please observe directions strictly.

SCIENTIFIC EDITORIALS

MEDICINE FAKES AND FAKERS OF ALL AGES.

From the dim ages of the past, when man first came to feel the need of physical or mental therapeutics, to the present day medicine, medical lore and medical practice have been associated with fakes and fakers of all kinds, classes and degrees—mythical lore, religious custom, priestly interpretation, fakers and monte bank have ever been the burden that the legitimate science and practice of medicine has had to carry. And this is not a surprising condition to contemplate when we reflect how narrow and schismic the profession is and has been. If we really had a profession who welcomed knowledge and truth for their own sake, who would be anxious to study and investigate all advances from whatever source, the various cults, isms and medico-religious bodies would not exist. Alas! however, for the profession as a whole, advances made must bear the stamp, the sign, the seal of powerful potentates or else face an onslaught, not from the public, not from its enemies but from physicians themselves. But we must expect such a *modus vivendi* when we stop and reflect that in this day of aeroplane and submarine, motor vehicle and telegraph, rapid transit by land and sea, electric light, motor vehicles and the "movies" we are living under and controlled by ethical consideration written by a dearly departed medico-philosopher fifty-nine years before the birth of Christ, an enduring monument to the unprogressiveness of the modern physician and surgeon. And think of it. Every student to-day is taking, or is to take, the Hippocratic Oath unexpurgated, up to date. Under the strict interpretation of this oath any surgeon who has operated upon any man, or for that matter any woman and removed a calculus of any kind is unethical and should be debarred from our great and noble medical associations and societies for does not the great (?) Hippocrates teach, we must cut no man for stone.

Laying aside, however, all badinage and airy persiflage, we cannot help but be deeply interested in an article published by John A. Foote, M. D., in *The Geographic Magazine*, January, 1919, and bearing the title of this editorial.

By way of mortifying the flesh let us start with this quotation:

"Guy de Chauliac, a famous surgeon who lived 600 years ago, wrote a surgical textbook which is now only a historical curiosity, and at the end of it he expressed the belief that probably no further progress in surgery would ever be made. In fact, each generation has been conceited enough to think that it knows much more than the preceding one; that it is, in fact, more progressive."

"Cure-alls we have always had with us—these and the drug fakers and substitutors. The slogan of 'something just as good' is older than Babylon and Tyre, older than Crete, perhaps as old as Egypt." "Truly, the explanation of the perennial youth of the "cure-all", of its endurance throughout the ages, is not an easy matter, since this endurance is deeply grounded in a weakness of human nature common to all peoples and all times—possibly in our primeval instinct to live. No one wants to die; few actually are ever convinced that they are going to die.

We are all really believers in miracles, and until comparatively recent days medicine and magic were closely associated. The Greek word "pharmakon" meant not only drugs, but also magic. We would all like to believe that somewhere in a fairy draught which once taken will make us free of pain, free of ills, young and vigorous. We have a secret sympathy with Ponce de Leon, who sought the fountain of youth and the alchemists who searched for the Elixir of Life were men like ourselves. Yet many a nostrum that started out as a secret formula, in the course of less than a generation became a recognized drug, used by the regular physicians."

We might here cite the interesting life, adventures and activities of one Dover, who gave and perpetuated his name by a powder we all use and have used. An interesting digression might be here made in noting that the "old fashioned" Dover's powder and not the powder of the modern pharmacopeia is the effective one. "At least one compound the use of which begins in pre-historic times and has continued down through the ages, even to the present day, changing very little in its constituents and not at all in its name. In England it is called hiera-picra, or powder of aloes and canella. Aloes is the active ingredient, and in every one of the numerous formulas except one, aloes has always remained."

If William Hawlins, of London, 1917, owned a magic carpet which would transport him back to the city of Damascus about the year 1000, in that ancient Syro-Arab city he need only seek out a Jewish drug vender in the bazaar and whisper "hiera" and hierapicra, not much different from which is used today would be forthcoming. Let him even go to Alexandria when it was building, or back to Memphis when the Pyramids were being planned, and the word hiera would evolve this same compound of aloes—the oldest nostrum

in the world. And though possibly tasting a little different, it would have the identical action of the compound dispensed by the modern London druggist under the name of "heirapiera." Ptah Hotep, of Memphis, who lived and wrote his proverbs 6,000 years ago, and over 2,500 years before King Solomon, probably knew of and used aloes, in some form. Besides antiquity like this the house of Hapsburg is infantile and the Hohenzollerns simply pre-embryonic. Most people at some time or another use cold-cream. It seems quite a modern luxury, indispensable alike to peer and peri, and adapted to many and varied uses. The first formula is attributed to Galen, who lived and wrote in the second century. What we use to-day is practically the same, though "Doctor" Galen's original formula was imitated and "improved" hundreds of times. Emperor Frederick II of Sicily, in 1240 or 1241, published the first pure food and drugs act. He was about 700 years ahead of Doctor Wiley, for he specified strict regulations of the standard of drug purity, and provided for drug inspectors, and fined all offenders. And this was in the so-called "dark ages." Even the fees of physicians and pharmacists were strictly regulated by law and were in purchasing value about the same as the charges of the present day. Physicians were not allowed to own drug stores and drug adulterators were severely dealt with.

The idea of general antidotes for poisons was a very ancient and very generally accepted belief. Some of us probably remember the "mad-stones" which not so very long ago were applied to mad dog bites to "draw out the poison." These mad-stones were unquestionably direct traditional descendants of the bezoar stones of ancient days.

Bezoar stones acquired their reputation in the East, among the Arab practitioners. Avenzoar, a great Arabian writer on medicine, who lived in Seville about the year 1000, was the first European practitioner to write about these supposedly wonderful stones. Many kinds of bezoar were sold, but the most valuable were the Oriental kind, *lapiz bezoar orientale*. This came from Persia and was obtained from the intestines of a Persian wild goat. It was merely a sort of petrification formed by the digestive juices about some foreign substance in the goat's intestines. But the medical authorities of that day thought that the stone was formed by some mysterious medicinal plant on which these animals fed.

Ambroise Pare, a great military surgeon of the 16th century, is credited with discontinuing the practice of searing the stumps of amputated limbs with boiling pitch, and instead successfully using ligatures to tie the bleeding vessels. He did not believe in the virtues of bezoar stones. One day when he was in attendance on King Charles IX, at Clermont, a Spanish nobleman brought a bezoar stone to the King, assuring him that it would protect him against all poisons.

Pare says his Monarch sent for him and asked if there was anything which could act as a general poison antidote. Pare replied that, as various poisons differed in their nature, the antidotes would necessarily differ. The Provost of the Palace was summoned and asked if he had in his charge any criminal awaiting the execution of the death sentence. The Provost bethought himself of a cook who was to be hanged for the theft of two silver dishes.

The King thereupon sent for the cook and proposed to him that in place of hanging he should be given a poison, to be followed by the universal antidote, and if the antidote proved efficacious he would be given his liberty. The cook gladly consented.

An apothecary was instructed to prepare a draught of deadly poison. This was administered and followed by a dose of the powdered bezoar. The unfortunate victim died in horrible agony seven hours later, in spite of all Pare's efforts to relieve him. The pharmacist had given him bichloride of mercury. An autopsy was then performed and Pare demonstrated to the King that the bezoar had not the slightest effect in counter-acting the corrosive action of the poison.

And the King commanded that the stone be thrown in the fire, which was done, Pare succinctly concluded. The patent medicine business in England, viewed as a distinct trade monopoly, really took definite form during the reign of Queen Elizabeth.

The oldest patent preparation still made in large quantities in Great Britain is probably Anderson Scott's Pills, patented under King James II, in 1687. Haarlem Oil, a turpentine compound, made first in 1672, and Godfrey's Cordial, a preparation of opium, advertised first in 1722, are still bought by the public. Animal products were much used in medicine from the sixteenth to the eighteenth century. Dried mummy was a favorite remedy. The importation of mummy was an industry of some commercial importance and several writers of that day caution against the use of spurious mummies giving directions as to what distinguishes the good from the poor product.

Even the English Parliament has been gulled by the "cure-all" vender. In 1739 an act was passed providing a reward to Joanna Stephens upon the proper discovery to be made by her for the use of the public of the

medicines prepared by her for the Cure of the Stone.

Nostrum makers have not confined their attention to the humble citizen. Some of the most notorious quacks have been favored by royalty. John Ward, who manufactured Ward's Pills and Ward's Drops and many other remedies in Paris and London, had no medical training but included among his patients Lord Chesterfield, Gibbon the historian, Fielding the novelist, and was so well thought of by George II that the King opened a dispensary at Whitehall and paid Ward to treat poor patients there. When, in 1748, a bill was introduced in Parliament to restrict the practice of medicine, the act contained a clause specifically exempting Ward from its penalties.

Queen Charlotte on one occasion asked General Churchill if it was true that Ward's medicines once made a man mad. "Yes, Madam," said Churchill; "his name is Mead." Richard Mead was the regular physician to the King.

The alcohol medicines, the cocaine medicines, the opium medicines and their less actively harmful associates, the sarsaparillas, etc., have had their day and their use has declined in every section of the country. The Council on Pharmacy of the American Medical Association holds the members of that influential body to a strict code of requirements in the matter of the kind of drug compounds they prescribe, and even compounds not advertised to the public must nowadays toe the ethical mark. Standards of regulations of the purity of drugs, rigidly enforced ethical codes among physicians, prescribed and standardized formulas in national pharmacopeias or formularies, and, most of all, campaigns in magazines, both lay and medical, to instruct the people in public health and sanitation, especially in the United States, have sounded the doom of the nostrum and the cure-all. No more are outlaw remedies made legitimate and admitted to the Pharmacopeia, for the prescribing of drugs is being put on a rational basis and the exploitation of the reason why medicines produce certain effects is becoming more and more of an exact science. The magical lure of ancient pharmacy has departed.

There are to-day no secrets in medicine, and the physician who makes a discovery that will benefit the human race must either share it with his fellows or suffer social and professional ostracism.

The cry that medicine is commercialized is hardly borne out by the data here submitted for "Alas! poor Yorick" the charges of A. D. 1240 are about in proportion to those of to-day. We need a little treatment of commercialism, if we are to survive the high cost of labor and living.

Perhaps the attitude of many of the profession against polypharmacy had its origin in these quack remedies of many, many ingredients and it is notable that the walls of Memphis have crumbled, centuries have looked down upon the pyramids and still we have the use of one, if not the only one ingredient of value in the polypharmacal masses and messes, aloes. We have said time and time again that human nature continues to be worked medically in the same old way, for did not these read and expose to view testimonials of the rare and racy variety in favor of their medicaments. And though the air vibrates with promise of peace and a League of Nations, the same old world, the same old story goes on and on. For to-day we have the Indian "medicine man" in this country and in the far away lands and tribes of Natal and Borneo the "witch doctor," continues to cast his spell and in Sarawak (Borneo) to follow the same old lines. The Freudian philosophy teaches that each child is born into the world with not only a heritage of its own forbears but on its shoulders lies the philogenesis of past ages. At its birth the child is savage, cruel, barbaric, must be moulded and trained into the creature we call civilized, an individual representing a compound of instincts, passions and necessities constantly in conflict with higher ethical training. Is it Utopian to hope that in the future, education will embrace a broad enough field to include medical fakes and fakers. This can be accomplished only by a breadth of mind not now characteristic of ethical medicine. Let us hope, however, for the future.

CURRAN POPE.

VACCINE THERAPY IN DERMATOLOGY.

Vaccine therapy in dermatology is practically limited to attempts to produce immunity to an infection already established, and not as a prophylactic. That it has not been successful to any considerable extent is demonstrated by the infrequent use made of it by the foremost dermatologists.

Acne, the most common of skin-diseases, is frequently treated with vaccines, both stock and autogenous being employed. The specialists in dermatology, however, usually employs a safer and surer method. There is no doubt that autogenous vaccines do sometimes produce results in pustular acne, although in the majority of cases this is not true. Moreover, even in those cases where the vaccine is ef-

fective it is not always desirable, owing to the frequency with which, under this treatment, so rapid an involution of the pustules occurs as to cause permanent scarring. In the non-pustular types where there is seborrhea oleosa and infection plays but little if any part, vaccines can have no value. Only such methods as cause a diminution of the excessive activity of the sebaceous glands can accomplish aught.

In chronic or recurrent furunculosis vaccines are indicated and their employment here has met with considerable success. In some cases stock vaccines meet the requirements, in others autogenous must be resorted to. Carbunculosis, dermatitis repens and pruritis ani are sometimes similarly benefited.

Many cases of psoriasis have been treated with injections of autogenous vaccines from bacteria from the throat or tonsils. However, this has not been successful and the use of vaccines in psoriasis has practically been abandoned. In eczema attempts have been made to cultivate organisms from the skin for vaccine purposes; also stock vaccines have been tried. Since it is extremely doubtful whether infection plays any great part in the causation or even perpetuation of more than a small percentage of eczema it is not surprising that no results have been achieved. The same thing is true of lichen planus.

In impetiginous diseases, as might be expected, more is to be expected. However, the acute infections usually accomplish their own immunity fairly promptly, while the same thing may occur at any time with the more chronic infections, so it is difficult to say how much credit is to be given to the vaccines in these cases.

Dermatitis herpetiformis, erythema multiforme bullosum and herpes zoster have all been treated with vaccines. In the latter two diseases, theoretically we might expect some results.

Tuberculins have been tried in tubercular skin affections. Their use is not advisable, however. It is said that lupus vulgaris is made more resistant to other treatment by the tuberculins.

Trichophytic infections have been treated with vaccines made from the causative organism with reported good results in a few cases; it is possible that such treatment may eventually prove of value in the ring-worms and allied infections. Both bacterial and trichophytic vaccines have been tried in a few cases of eczematoid dermatitis with some possible benefit. However, insufficient work has yet been done to warrant positive statements.

The present status of vaccine therapy in dermatology, we think we may safely say, is that outside of a few conditions, especially the furuncular and carbuncular infections, it is not advisable to depend upon the vaccines, and hardly advisable to use them at all except in an experimental way.

M. L. Ravitch and S. A. Steinberg.

OFFICIAL ANNOUNCEMENTS

AN ABLE DECISION BY JUDGE BUSH SUSTAINING THE INFLUENZA REGULATIONS.

In an opinion rendered last Friday morning in the Calloway Circuit Court, Judge Bush sustained the decision of Judge Phillips in the county court in the case of George Tidwell charged with violating the "flu" ban last February. Tidwell, together with E. B. Holland, Colporter Will Jones, Lee Wicker, Galen McBride, George Heppener and Rev. H. B. Taylor were arrested for attending prayer meeting at the Baptist church in violation of an order of the County Board of Health prohibiting all public gatherings. Rev. Taylor was fined $100 in two cases, while Tidwell, Holland, Wicker, McBride and Jones submitted their cases and accepted a fine of $50 each. Heppener was tried before a jury in Judge Phillips' court and was fined $10. Tidwell and Wicker appealed their cases to the circuit court and the Tidwell case was called Wednesday of last week and the arguments were heard by the judge Friday morning. Immediately following the close of the arguments Judge Bush rendered his opinion.

The court house was filled with men and women and the very closest attention was given the proceedings of the trial. The opinion rendered by Judge Bush was one of the most splendid ever handed down from the bench in this county, and those who were fortunate enough to hear this able jurist said it was one of the cleanest, frankest, most concise expositions of the law ever given in the county. *The Ledger* is able to give the following opinion in full:

The situation here has attracted attention for some time. It has assumed phases of an unpleasant nature and, in the judgment of the court, uselessly so.

I approach the consideration of this case of the Commonwealth vs. George Tidwell with no feeling of prejudice either way; I have no personal interest in it, whatever, more than any other citizen. All the concern I have is

to do my duty as I see it, both to the Commonwealth and to the defendant.

I always sympathize more or less with any person, whatever may be his station in life, charged with the violation of law, and have a great horror of doing anyone injustice. It is said that there was once a discussion among the wise men of Greece as to what was the best method of government, and Solon, who was considered the wisest of all, was called on for his opinion, and he replied: "That method is the best, where an injury to the humblest citizen, was an insult to the whole constitution." No man ever uttered a nobler sentiment, or announced a more precious principle, outside of inspiration itself.

This is an important case, although involving merely a misdemeanor, with a comparatively small penalty attached. The parties had a right to a jury to try the facts, but they agreed to submit it to me for trial and judgment, without the intervention of a jury. I was perfectly willing to take the responsibility, and determine the matter according to my convictions of right, under the law and the testimony.

I have to say in the outset that if any person's religious liberties are abridged in any way by the order of the Board of Health, it would not be countenanced by this or any other court of justice. If any person's religious convictions, faith or doctrine, are trampled upon or in any way assailed, or interfered with by the action of this Board of Health, then the court should set the seal of condemnation upon it, and I will not hesitate to do so, if I reach that conclusion. I yield to no man in my respect and reverence for the religion of Jesus Christ and I yield to no person in my regard for the rights of those who, in accordance with the dictates of their own conscience, and in their own way, assemble to worship God. To secure these inalienable rights and privileges, the constitution, the sacred ark of our political covenant, was framed. The chief end which its illustrious framers had in view, was to secure the blessings of civil and religious liberty to themselves and posterity. As we value the work of our forefathers, and honor their memory, we should be averse to every semblance of religious persecution. This much I have thought proper to say because of the clamor raised on account of the action of the Board of Health, by making an order prohibiting people from assembling in church buildings, and especially at the Baptist church in Murray, during the prevalence of the recent epidemic of influenza. The order applied to all the churches, and while it was in force the proof shows that defendant, Tidwell, attended prayer meeting at the Baptist church in January, 1919, and this case is based upon a warrant, that was issued against the defendant for violating the order.

For the defense, the question is raised that the order of the Board of Health, though authorized by the statute laws of the State, in the discretion of the Board of Health, was in violation of the constitution, and of the principles of religious liberty which I have announced. Now I propose to briefly consider this proposition.

While the organic law of this land prohibits the enactment of laws respecting any religion and guarantees religious freedom to all citizens, and the right to peaceably assemble to worship God, and for other lawful purposes, and while it is furthermore true that by the fundamental law of this country, and all laws made in pursuance thereof, every citizen is protected in his religious opinions and faith, regardless of how far wrong he may be, and this protection extends to all kinds of religious cults and heresies, however much they may be antagonistic to the religion of the Nazarene. Yet after all, the church, even the Lord's church, though not of this world, and separated from the State, must be subject to the powers that be. This principle was announced by the Savior, who, when asked if it was lawful to pay tribute to Caesar, declared, "Render unto Caesar the things that are Caesar's, and unto God the things that are His." The Apostle Paul, writing to the Christians in the wicked city of Rome, said, "Let every soul be subject unto the higher powers, the powers that be, are ordained of God." And he further warned them not to resist the powers that be.

Paul himself appealed to Caesar more than once, and thereby saved his life by being protected by Caesar's soldiers from religious fanaticism and intolerance. On several occasions, it was the great apostle's boast that he had violated no law. I speak of these matters to show that under our constitution and laws there is no conflict between divine and civil or human law, and although possessed of the inestimable blessings of civil and religious liberty, they must be exercised within the limitations of wholesome law, and in a manner not inconsistent with the general welfare or of human rights.

If the Legislature of Kentucky through the Board of Health or otherwise, had have said that this great Baptist congregation at Murray or its able and consecrated minister, Dr. Taylor, or to the Methodist, Presbyterian, or other churches, and able and faithful ministers, that they should subscribe to any particular article of faith, or any creed, it would

have been an outrage, and nobody would have been bound by it, or have submitted to it, and no court would have countenanced it for a moment. It would have been a nullity. But for the very reason that the churches and individual members are protected by the civil law, in their worship against religious intolerance, and persecution, is why they should submit to civil law.

Stephen, the first martyr to the Christian faith, was stoned because he was afforded no protection. All of the apostles, with the possible exception of John, were put to *death* because the civil authorities afforded them no protection. The Spanish inquisition with its rack and thumbscrew, instruments of torture and death, for the faithful Christians were the inventions of religious fanatics and persecutors, and the civil law afforded no protection. The same can be said of the massacre of St. Bartholomew, and in numerous other instances. No such condition can exist in this land, because the law throws its aegis of protection around the humblest in the worship of God.

Now would not the church and the individual members who comprise the church, be in a singular position to ask protection for themselves and then refuse to submit to civil authorities?

Sometimes buildings become unfit for occupancy, become unsafe and dangerous; this is sometimes the case with a church building. Sometimes the town trustees or councilmen condemn them, and forbid meetings in them to save life. Now suppose a number of persons would wilfully violate such an ordinance, and congregate in a condemned building and perhaps the injury or death of some woman or child would be the result, who would say such an ordinance was wrong, or that those offending should not be subject to a penalty for disobeying it.

Much has been said in the argument in this case about establishing quarantines, to protect the public against the spread of contagious and infective diseases. It is conceded that under the law this may be done by the Board of Health. Now if this may be done there can be no doubt of the power of the Board of Health, in the exercise of a reasonable discretion, to prohibit the assembling of people in churches and school houses and other public places. I might in this connection refer to the law of leprosy contained in the Mosaic code. The most devout Hebrew, as dear as the tabernacle or temple was to his heart was, when afflicted with leprosy, segregated and barred from God's house because of that disease, and its malignancy. Upon the same principle the churches were closed during the recent epidemic.

It might possibly in some instances be unnecessary, but who knows about that? Under such condition it is the concensus of opinion among physicians, and those whose special duty it is to be concerned about the public health, that such precautionary measures should be adopted.

Now there has recently existed in this county an epidemic of influenza, perhaps the most wide-spread and far-reaching disease in the history of the world. No country, no race of people, no condition of society has been immune from it. It has extended 'from the rivers to the ends of the earth.' Like all epidemic diseases, from the beginning of time, some have escaped, many have suffered from its ravages, indeed some of the physicians have testified that it has proven to be a much more fatal disease than smallpox.

The evidence largely preponderates that influenza is contagious; doctors speculate a little and some say it is much more infectious than contagious, but they generally agree that it is both, and, anyway, that it is a communicable disease. The evidence is conclusive that to have permitted men, women and children to assemble without restrictions, in the churches and school houses would have been almost inconceivably disastrous to the public health, and placed the epidemic beyond control. The Board of Health actuated by the purest and loftiest motives, put on the ban. It was done, I think, wisely and humanely and in the exercise of a power clearly authorized by law.

It is absurd to suppose that the Board of Health took any pleasure in closing churches. Its members, as well as a large majority of the physicians, are Christian men, and church workers. What they did was a public necessity. It was done all over this state and in many other states. It was well nigh universal in case of churches and schools. Most of the courts adjourned; that is, practically, some few on account of congestion of business held sessions, the attendance being confined chiefly to those who had to be present, the attendance of others not being allowed.

There was no discrimination against any church, they were all treated alike. It is solemnly urged as a reason for adjudging the action of the Board of Health illegal, and dismissing this case, that people were permitted on the streets, in stores, restaurants, and in the court house. I see no merit in this contention. There is much difference in traveling in the open air and being crowded for hours in public buildings; besides people had to visit stores and restaurants. It may be said

they need the Bread of Life as well as something for their physical appetites. Undoubtedly, but a temporary closing of the churches, to prevent the spread of sickness, disease and death, did not stop the worship of God.

All who sincerely desired to do that, could brush the dust from their Bibles and read them, and pray and worship in their homes as the early Christian did. That would be a most effectual way of service anyhow. I say God bless the churches, and the work of the churches, but I wish they were supplemented by more family worship as in the olden times. I think it would be well to 'keep the home fires burning.'

However, suppose in dealing with the epidemic the law was not enforced against some, does that prove that defendant should not be subject to the laws? If it does then nobody should be restrained, we would have no law or order. There was never a law from Mt. Sinai to Murray that was not violated. Therefore, we should have none and be remanded to a condition of hopeless barbarism? There have been many trials and convictions for various offenses in this court. Should they have all been ignored because many persons just as guilty have not been brought to justice? I do not think anyone can make such a contention seriously.

Complaint is made that the defendant did not have sufficient notice that the "flu" ban was on. To serve every individual with special notice would have been impossible, and was never contemplated. There must have been notice. Notice to the people of the passage of a law is by promulgation—publication. This is essential to its validity. When that is done, the notice is sufficient. Notice of this ban was published in newspapers of Calloway county. It was posted at the postoffice, and the defendant in answer to a question by the court admitted that he knew that the churches had been ordered closed. More than that, he admitted that on his way to prayer meeting that night he heard that the County Attorney said he intended to have those who attended the prayer meeting arrested. I don't think the defendant can be heard to complain that he did not have notice.

He was and is a member of that church, Dr. Taylor, the honored pastor, had been fined that week for violating the "flu" order the previous Sunday, and had declared publicly that he intended to hold prayer meeting that night. Defendant attended and in my judgment, knew the meeting was prohibited by those authorized to do so, and therefore, I cannot escape the conclusion that he is guilty and should be fined, which the court will fix by its judgment, to be entered herein.

ORIGINAL ARTICLES

A FEW POINTS ON EXAMINATION OF THE CHEST FOR TUBERCULOSIS AS GIVEN IN MILITARY TRAINING BY MAJOR ESTES NICHOLS.*

By Ed Barr, Owensboro.

There seems to be a great deal of confusion in the minds of medical men about the early stages of tuberculosis, and the diagnosis of it in the early stages is in a very unsettled state. It is often taught that the local lesions of tuberculosis may be diagnosed at an exceedingly early stage and by so doing a prompt cure may be expected.

The great error the army men of to-day say has been in attaching to incipient tuberculosis, those things which in reality belong to a chronic disease, viz.: the so-called abortive, attenuated or healed lesions. So what we want to know is the difference between acute tuberculosis, a chronic inactive tuberculosis, a chronic active tuberculosis and acute respiratory colds which may produce signs in the chest that sometimes deceive us. Now in making our examinations we should have the man stripped to the waist and standing in front of him we should first note especially two things. First, the conformation of the chest and also depressions. You should also, of course, observe if either side is lagging in its expansion and especially is this liable to occur in an apex if affected and when noticed we at once suspect that something has been going on in there to produce it. The question is, what has it been. Not pleurisy for that rarely, if ever, affects that part of the lung. So the only logical thing to us is that the tissue which normally gives the motion to that lung has been replaced by tissue, that does not move, viz.: connective tissue, and you at once have a mental suggestion of tuberculosis by your inspection. It does not, however, suggest to your mind whether this is a chronic active or chronic inactive disease. So you would now consider it by percussion. This is a very particular part of our examination for we find men making a diagnosis of active tuberculosis by persecution. We may make many errors in percussion and psychology may enter in here easily. A man for percussion should be in an easy natural position, not folding his arms tightly across his breast, for in this position you get a changed note and if percussing

*Read before the Daviess County Medical Society.

from in front, where should you begin? It seems that we were all taught to percuss from above downward, but in the army they say no, you must not do that, but instead you must establish your normal percussion note for the individual over the normal vesicular area, which is the axilla. So begin here by establishing your note and percuss upward, and why? Because you will find if you percuss from above downward over this area you will carry your dulled note, if found, much farther downward than you would have by first establishing your normal percussion note and percussed upward, and in standing behind a man to percuss over the back of his lungs he should have his arms easily folded and stooped just enough to relax his muscles, and we should begin in the infra scapula region because in the back we have the true vesicular area here, and here again we can easily make many errors in our percussion. For instance a deep percussion over base of right lung causes a normal dull note, and by deep percussion on left side (by position of distended stomach and colon) we may get a hyper resonant note, and should we begin in base of left lung and get our hyper-resonant note, then changes over immediately to the right and get our dull note, we might have suggested to our minds a tubercular infiltration of the base of our entire lung, where the truth would be that both were normal.

Again we were taught that in going upward from behind we have a dullness known as muscle dullness due to the overlying heavy muscles and in striking this note near the lower angle of scapula, to remember that it is a muscle note and normal and if your patient is sitting in an exaggerated stooped position, this dull muscle note may carry so far up as to make you think you have a dullness in your apex and of course your mental suggestion again of tuberculosis. So we all should remember that position is quite a factor in examination by percussion and if we are to depend on percussion to make our diagnosis, we must constantly keep in mind the normal things within the thorax that produce different percussion notes. Now, returning to our lung apex, as an example, after inspecting and percussing it to our satisfaction, we should next want to see if there is a narrowing of the isthmus, remembering that this is the narrowest part of the lung lying above the clavicle in front of the spine of the scapula behind and when normal is about two inches wide and is slightly wider and extends a little higher into the neck on the left side, than on the right. Now if you can percuss this out carefully and can satisfy yourself that it is too narrow for a normal apex and have already found it lagging in expansion, you at once know you have had here a contraction of normal lung tissue. Should this suggest acute tuberculosis? No, because in that you would have a congestion, consequently no contraction, but instead we know we have a chronic tubercular lesion. Now the next question? Is this chronic active, or chronic inactive tubercular trouble, and having gotten this far we try to determine this step by auscultation and by this you will now get prolonged expiration, increased spoken and whispered voice sounds and may get roughened or so-called bronchial vesicular breathing and, here again, most of us have been taught that the earliest possible signs in incipient tuberculosis is prolonged expiration, but in the army they say you get these only in the presence of connective tissue and this kind of tissue carries the sounds conveyed by the bronchus to the surface more readily, and that you do not get these sounds from congested tissues, but contracted tissues, hence, can't get them in the acute tubercular infection. And further, you see that the change in breath sounds does not prove whether our case is active or inactive but is only corroborative of a chronic tubercular lesion. But if you have all of this and have your patient exhale all of the air from his lung that he can and then cough at the end of his expiration and you get, on the inspiration following, persistent shower of fine rales you may be assured that you have a chronic active tubercular lesion, and if you have all of this and your rales remain absent you may say you have chronic inactive tuberculosis. So much for the chronic type. But we have another type.

A patient who is apparently not very sick and possibly has been working right along and we find on chest examination that he has equal breathing on either side with no change in percussion note, no narrowing of the isthmus, no change in breath sounds, but does give us a shower of fine rales in one apex extending down to the third or fourth dorsal vertebra, remembering no change in any of the things mentioned a little while ago but simply a constant shower, as it were, of fine rales. Many of us might think this an acute respiratory condition due to cold, but when you take this man's temperature you find it an hundred, and a history of not feeling good for some time, and if it be an acute cold your rales would be general over both lungs and occurring with no reference to inspiration or expiration and further, when you lay him off from his work for a week they are all gone. Not so in acute tuberculosis. So remember in acute tuberculosis you do not get any changes in breath sounds, but you do get persistent fine

rales and that acute tuberculosis is always active.

Some may say, why don't you radiograph him to prove whether or not it is acute tuberculosis. Now, in the army, they tell us that in acute tuberculosis you see absolutely nothing with the radiograph. The department of the army says that you can not see fresh tubercle lesions any more than you can see the bacilli itself and that it is not possible to diagnose this type by anything except the persistent fine rales and so it is impossible to diagnose it there before these rales occur, and if this be true, what authorizes us to make a diagnosis of acute tuberculosis in an apex when there is not present the persistent fine rales, absolutely nothing.

Another type of tuberculosis which has gotten by the medical men of the army is the so-called hilus tuberculosis. Of course, it is not a very common type, but more common than many of us imagine and what do we know of it? First, that the lesion is very deep and there are very few changes in sounds and no signs that give you any key to the condition except one, and that is known as D'Espine's sign, and this sign is brought out in the following manner. You begin at the first dorsal spine and listen down immediately over the spines and have the subject whisper in rather a loud whisper and note the point where that transmitted sound becomes very much diminished, which is at the sixth dorsal spine. In the normal subject you may get it at the fifth, in the thick, short chest, or the seventh in the long, thin chest. Now if that voice is carried below this point with greater distinctness you should listen in a triagnular area on either side and if you have hilus disease it will be carried out over a triangular area in this region, either on one side or the other and when we get this we should radiograph this area. You may get a few fine rales near the angle of the scapula but it is very difficult to get any change in the percussion notes. Now with the D'Espine's sign you may have your hilus disease proven. It may be either tubercular or aneurism of the descending aorta, which you can prove by your radiograph.

Gold Salts in Treatment of Experimetnal Tuberculosis.—From DeWitt's experiments the conclusion is drawn that the treatment of experimental tuberculosis in guinea-pigs with gold salts is not efficacious. No attempt has been made to use these salts in human patients. The tendency to hemorrhage and hyperemia in the gold treated animals and the marked shortening of life on account of the treatment suggest that the treatment of human tuberculosis patients with gold is not without danger

ACUTE ABDOMEN.*

By M. Casper, Louisville.

The many indeterminate, indefinite and incorrect diagnoses of acute pathological conditions of the abdomen are sufficient reasons for a little consideration of this exceedingly interesting and very complex corner of human anatomy. Surgeons are frequently and profoundly impressed in operation of the very superficial knowledge of many general practitioners in many of these cases as well as the surgeon's own shortcomings when it comes to definite differentiation of this or that acute abdomen.

In many cases it is only necessary to be certain that we are dealing with an acute abdomen for practical reasons and in some cases even this is not as easy as one would judge from superficial consideration. Diagnosis here is often necessarily of a "snap judgment" variety, as often quick, heroic action only may save the patient and we cannot give some of these cases that calm deliberation and study under ideal conditions that we would most desire, but must rapidly assemble attainable facts and findings into an intricate but composite whole and therefrom deduce our diagnosis.

These cases are usually seen first at their homes under very adverse surroundings and many handicaps are put on the busy hard-pressed-for-time general practitioner, as he sees many very sick people who just get well somehow, anyhow, especially of their so-called indigestion, belly ache, etc., that he may not give this particular extremely ill patient as deep and careful study as the case warrants. Hence, he delays and calls the surgeon a day later than he should. Let us plead not to do it that way, but in case of doubt call a consultant at once in these cases. The surgeon is accustomed to handling and studying the living pathology of these cases and is, as a matter of course, often able to aid the medical man in diagnosis. The surgeon, however, for that matter too, has also been stung hard and often on the diagnosis of acute abdomens and he has not failed to profit by this invaluable experience.

Acute abdomen from even the standpoint of diagnosis alone is an immense subject and any surgery in a paper of this magnitude must necessarily only touch the subject in spots. Acute abdominal symptoms are not at all like the text books would leave us to expect but shade into each other so complexly as to baffle the most astute diagnostician. At times, more than one diseased organ may form a com-

*Read before the Jefferson County Medical Society.

plicated whole. We would expect this when we contemplate the complexity and possibilities of abdominal anatomy and pathology. Again many of these cases are those of very rapid progress and by delay are really so far advanced that the abdomen by having become so greatly distended that exact diagnosis is impossible.

In dealing with "acute abdomen" the first thing we must assure ourselves is whether the condition is intra or extra-abdominal. In a former paper to this society we quoted a large number of tabetics being subjected to laporatomy, "the percentage being 8.7 in a thousand cases," according to Nazum. Further Nazum showed "that 65 per cent. of them had abdominal symptoms and in 17 per cent. the crisis was the initial symptom of their disease," he ascribes the error to failure to examine the nervous system. Also hysteria and referred pain from spinal conditions are always to be kept in mind. Adenitis of the inguinal and deep iliac lymph nodes may simulate acute appendicitis, while vascular crises may simulate mesenteric vascular occlusion as emphasized by Eisendrath in a late and splendid lecture on this subject.

Of extra abdominal conditions simulating acute abdomen one of the most confusing is pneumonia and pleurisy, especially if beginning in right diaphragmatic region. This condition in a child present costal breathing with rigidity and tenderness of right abdomen, coughs perhaps a little and altogether presents a rather difficult point for differentiation. Where possible the use of the roentgen ray is of immense value in the diagnosis of chest conditions and in the recent epidemic in the army, many cases of pneumonia empyema were demonstrable by the screen long before pathognomonic physical signs put in their appearance. J. A. Capps gives the following points of differentiation between diaphragmatic pleurisy and acute abdominal inflammation.

1. The skin and muscles of the abdomen are more sensitive to pain and touch in referred pleural pain than in visceral disease. Elicited by pinching the wall and scratching the skin.

2. The cutaneous reflexes are more lively in referred pain as a rule.

3. Deep pressure is better born in referred pain.

4. Evidences of respiratory infection usually are present in diaphragmatic pleurisy.

5. Appearance of a sharp definitely localized pain in the neck of the same side as the abdominal pain often reveals the true condition as it points to irritation of the phrenic nerve.

6. Referred pain in the neck and abdomen usually are induced or aggravated by cough and deep inspiration.

7. Nausea and vomiting are more constant in visceral abdominal inflammation, but may occur and be very pronounced in pleurisy.

8. Hiccough is more often seen in visceral infection. In addition to Capps' points of differentiation a few hours time and a repeated examination will often clear up a case in doubt.

Coming now to truly intra-abdominal conditions we have many. Women on account of her internal genital organs location are more often the subjects of acute abdominal disturbances. However, we must not overlook torsion of an undescended testicle or inflammation of the intra-abdominal portion of the vas deferens, we have all seen how confusing this latter condition is in the first hours till the inflammation has gotten down into the epididymus, also at times these patients are inclined to hinder our efforts rather than render us aid in a diagnosis, especially if an anxious wife or mother is at the bedside.

Ills, peculiar to the female of course, are many, most of these are, however, easily differentiated by the bi-manual or rectal examination and we would emphasize right here that no examination of an "acute abdomen" is complete without a vaginal or rectal examination or both. Acute salpingitis in a young unmarried girl will often be mistaken for appendicitis without above examination. Ovarian cysts with a twisted pedicle or twisted pedunculated sub-peritoneal fibroid of uterus may be hard to determine at times. Also appendicitis with a mobile cecum, allowing it to dip down in the pelvis may simulate right sided salpingitis or oophoritis very closely. Ectopic pregnancy will often be overlooked by those especially who neglect the taking of a careful history.

Diseases of the urinary tract formerly were often entirely overlooked but thanks to the rapid advance in urological diagnostic technique, now with X-ray, cystoscope and uteral catheterization many of these otherwise complex cases are simplified. Not only were diseases of urinary tract confused with other surgical conditions but also were often erroneously treated for general conditions like malaria, typhoid fever, influenza or central pneumonia.

Some of the diseases of the genito-urinary tract that we must differentiate in acute abdomens are renal and ureteral calculi, Deitl's crisis, stricture of ureter with infection, acute

infected kidney, perinephrosis, tumor of kidney with fever.

Peritonitis is the big item of the acute abdomen. The peritoneum bearing some relation to all the abdominal viscera necessarily is important. Peritonitis is usually a secondary infection, the primary focus is to be found (and this may even be extra-peritoneal, notably that due to the pneumococcus). It may come on following a pulmonary infection or be the leading localization of infection. Two other causative agents of peritonitis are gonorrheal and tubercular infection.

It must not be forgotten that tubercle infections are sometimes very acute and also sometimes very much localized. We operated last month for acute obstruction and found a tubercular process involving less than 18 inches of only the ilium with acute angulation causing complete obstruction. Also it has been demonstrated by Sprengel, Noetzel and Eisendrath that infection of the peritoneum may ensue without perforation of either the appendix or gall bladder.

We recently had a case in which a large amount of bile was present free in the abdomen with no perforation of bile duct, gall bladder or intestine and the only way it could possibly have gotten through was by filtration through the soft thickened walls of gall-bladder which was very much distended and diseased.

Appendicitis probably ranks first in importance in point of frequency in producing the acute abdomen. In a paper of this kind it is impossible to even review the large field of appendicitis. Will give Murphy's syndrome which we find reliable for diagnosis of appendicitis:

First: Pain, sharp and lancinating, acute in onset at first more or less diffuse; finally localizing over right iliac fossa.

Second: Nausea and vomiting which are at first reflex but if persistent probably means peritonitis as well.

Third: Rigidity of right rectus muscle and tenderness in McBurney's region. General board-like rigidity signifies peritonitis.

Fourth: Elevation of temperature occurs during some part of every attack. Rectal temperature often one or two degrees higher than oral.

Fifth: Leucocytosis with increased polynuclear cells. Leucocytosis of 20,000 or higher implies immediate operation. Leucocyte count may be low and hence misleading in fulminating and abscess well-walled-off-cases. Tumor mass, or even the greatly enlarged appendix itself, may be palpated.

We must bear in mind the by no means rare atypical case, which presents different aspects and requires special handling. The last case we operated upon was a full grown man with mass located in groin. We made a snap diagnosis of retro-peritoneal appendix with abscess and successfully removed it from low incision without opening the peritoneum at any point. One other case some time ago we removed through incision in back, thus obviating exposing an unsoiled peritoneum to the danger of infective contamination.

In this connection would call attention to the fact that malignancy of the appendix and caecum are sometimes important and unsuspected discoveries in operating for supposed acute appendicitis, also the old time disease typhilitis still occurs and is not distinguishable from appendicitis and they often co-exist. Acute adenitis of the ilio-coecal glands are sometimes found and may be very confusing.

An acute abdomen may arise from any part of the long intestinal tract and differentiation before exploration is often impossible. These possible conditions are so numerous and are for the most part so self-explanatory, that we will only attempt to enumerate them.

In small intestine:

First: Inflammatory changes in a Meckel's diverticulum.

Second: Ileus, (a) mechanical due to various intestinal obstruction, (b) or may be reflex or adynamic in character.

Third: Enterocolitis.

Fourth: Lead colic.

Interocolitis and lead colic are mentioned more to be thorough and are hardly possible of confusing with a surgical abdomen. Ileus may be due itself to many conditions as (a) stricture, congenital or acquired, (b) tumor from without or of gut wall itself, (c) adhesions or bands, (d) foreign bodies in lumen as fecal matter, enteroliths or gall stones in bowel lumen, (e) volvulus, (f) hernia through apertures or internal hernia, (g) intussusception, (h) hernia by and of Meckel's divertieulum.

Syndrome common to all forms of ileus are (1) stasis of flatus and feces, (2) vomiting at first contents of stomach, then bile later a brownish, fetid material resembling fecal material, but truly 'tis not fecal, (3) gradually increasing abdominal distention.

The exception to this rule is intussusception in children who often pass many stools usually consisting of blood and mucus and abdomen may be not at all distended, on the other hand the sudden shock and collapse should warn us of the serious import of the condition.

We must not overlook the misleading ef-

fect of a dose of morphine in all these cases, as it successfully masks the symptoms. Also it is quite impossible to differentiate an advanced peritonitis from intestinal obstruction for the symptoms are identical. Earlier peritonitis, however, presents more rigidity.

In coming to a diagnosis of any acute abdomen we must profit by a searching history, one of our most valuable assets. Pathology of large bowel is much the same as the small except more frequently the seat of malignancy and diverticulitis. The latter condition resembles appendicitis very much, but is usually on the left side in the sigmoid, and a tumor is often present and may be, not always, the so-called "disappearing tumor."

The mesentery and omentum are sometimes the cause of "acute abdomen" by the following methods:

1. Torsion of the omentum.
2. Acute suppurative epiploitis.
3. Occlusion of the mesenteric vessels.
4. Acute infection of the mesenteric lymph nodes.

Rarely we have "acute abdomen" due to splenic conditions as an abscess or tortion of splenic pedicle. Pancreatic involvement, as acute and sub-acute pancreatitis are possible causes and are sometimes even hard to find when we are in the abdomen because of deep location of pancreas. However, the presence of fat necrosis and the escape of "beef broth" colored fluid will at once lead us in the right direction. Also we must not forget that gall bladder disease very often co-exist with pancreatitis.

Perforating gastric and duodenal ulcer very closely simulate pancreatitic inflammation, though while collapse is great and profound in perforating ulcer, it is even more so in pancreatitis. Perforating ulcer especially of duodenum is also often mistaken for appendicitis because of pain and tenderness in the right iliac fossa due to gravitating infective stomach contents to this region. In addition to suddenness, pain, tenderness and rigidity the history is of great importance and patient may even have received previous treatment for ulcer.

Since the every-day use of the X-ray in studying ulcers we know now that every perforating ulcer does not produce acute symptoms, this was first directed to our attention by Moynihan and Lund, whom we extensively quoted in a former paper on ulcer.

Acute dilatation of the stomach is usually a complication of some other condition sometimes in general depression of severe extra-abdominal disease or typhoid fever, operations on upper abdomen or appendix. It requires prompt recognition and gastric lavage else it may terminate very disastrously.

The biliary passages, liver and subphrenic space may be a good second to appendicitis, in acute abdominal conditions, especially since improved social conditions have cut down pus tubes and their accompanying complications.

Subphrenic abscess is always secondary to either gall bladder infection duodenal ulcer, appendicitis or kidney infection, and is usually on right side though it may occur on the left. It can be readily demonstrated by X-ray screen if patient can be gotten to roentgen dark room. The condition often gives rise to chills and fever. Would advise not to use needle for diagnosis unless prepared for immediate operation. Same applies to abscess of liver. Abscess of liver may be often hard to diagnose, it is rare in this vicinity because amebic dysentery, the chief progenator of liver abscess, is rare here, especially severe types. These patients are usually very ill with great prostration, chills, sweats, and fever and look like death sometimes long before the fatal crisis. The abdominal diagnostician must be on his guard for liver abscess in all infections from which the portal vein derives its blood, also it may occur directly by infective cholangitis.

The subject of acute cholecystitis with or without calculi in gall-bladder or ducts or both may present many angles but under present accurate history and assembly of diagnostic facts we can often arrive at a fairly accurate determination of the exact pathology. We have gotten away from the term operation for removal of gall stones as it is generally recognized now that the stones are quite secondary in importance and formation to the primary infection.

Jaundice and X-ray findings are uncertain quantities in gall-bladder diagnosis. Stones, in spite of improved X-ray technique still in the majority of cases successfully elude the roentgenologist. Also jaundice is by no means a sign of stones, nor is its absence indicative of no stones. We must rely for diagnosis on history, pain, chills and fever, and physical findings. Also we must constantly be on the alert for the atypical case and urge also that any one who assays to open the abdomen of his fellow man must go forth with the certain ability to cope with any pathology that may exist.

The medical profession as a whole abhors the self-styled surgeon with little ability and less conscience who boldly enters "where angels fear to tread."

DISCUSSION:

Herbert Bronner: Even the urological aspect of "acute abdomen" covers such an extensive field that one can only touch upon certain of the most important features.

The differential diagnosis between appendicitis and ureteral calculus is not always easy, appendicitis being frequently mis-diagnosed ureteral calculus and vice versa. For instance, the records of the Massachusetts General Hospital show that many patients who have been operated upon under the diagnosis of appendicitis return a few months later with similar symptoms as before the operation; the diagnosis is then changed to ureteral calculus and the concretion removed by operative procedure followed by complete recovery. It must be remembered, in this connection, that ureteral calculi do not always produce classical symptoms; in fact, Young, of Boston, says that classical symptoms are noted in but few cases. Some of the patients with ureteral calculi never have the so-called colic; the most expert roentgenologists admit the possibility of diagnostic error in over twenty-per cent of ureteral calculi; and especially in the vesical portion of the ureter are ureteral calculi likely to cause confusion in the diagnosis. In such cases cystoscopy is of decided advantage, because when the calculus is low in the ureter definite signs of its presence will be noted about the ureteral orifice. The introduction of a ureteral catheter will usually complete the diagnosis.

Along this line I want to mention a group of cases, of which there have now been reported a sufficient number to make them worth while, i.e., appendicitis accompanied by hematuria. Several explanations have been given to account for this phenomenon. The most of the cases are probably due to toxic nephritis. I recall one patient seen in the Louisville public hospital who had appendicitis accompanied by profuse hematuria which investigation showed was due to toxic nephritis. Another case seen recently with Dr. Leachman seems worthy of mention because it teaches a lesson. The patient had been operated upon by Dr. Leachman for abscess which pointed in the peri-nephritic area. Following the operation the patient still complained of pain in the right side of the abdomen. As the urine contained blood cells I was asked to see the patient in consultation. Examination of the urine showed many blood cells, a few leucocytes and tube casts. The X-ray examination was negative. Cystoscopy was practiced and urine obtained from both kidneys; both urines contained blood and tube casts. The patient had toxic nephritis due to a focus of infection in the appendix. Appendectomy was then performed by Dr. Leachman and all the symptoms disappeared.

Another explanation for hematuria accompanying appendicitis is that there are adhesions or plastic exudates pressing upon the ureter. Dr. Irvin Abell reported a case before this society some time ago in which the patient had symptoms rather typical of ureteral calculus; repeated X-ray examinations were negative. Introduction of the ureteral catheter met sufficient obstruction above the pelvic brim to justify exploration. The catheter was left in situ and the abdomen opened. The appendix was found markedly inflamed and there was a mass of exudate pressing upon the ureter. Appendectomy with separation of the existing adhesions caused subsidence of all symptoms.

Another class of cases mentioned by Dr. Casper are especially worthy of consideration, i.e., acute hematogenous infection of the kidney. I want to lay stress upon this group of cases, because they show practically no urinary symptoms, and no doubt in many instances mistakes in diagnosis have been made. Dr. Brewer, of New York, first called attention to this class of cases, and the fact that they may resemble, in a marked way, the fulminating type of appendicitis. The patient has chills, fever, abdominal pain, rigidity, and when the right side is involved the diagnosis of appendicitis or gall-bladder disease may be made. In many cases of this kind operation has been performed under the belief that the patient had appendicitis or gall-bladder disease, and nothing pathological being found in the right abdomen the wound was closed and an incision made in the kidney area which disclosed the so-called acute hematogenous infection or septic infarct in the kidney. The urinary findings in such cases are usually very slight. The most typical symptom, and one which Cabot has emphasized, is a characteristic costo-vertebral tenderness. It is essential to make an early diagnosis in severe cases because of their fulminating type; the infection is always due to streptococcus and staphylococcus; the patient rapidly becoming septic; and unless early nephrectomy is performed death is imminent. In the milder form, due to colon bacillus infection, the symptoms are less urgent and decapsulation, nephrotomy or even medical measures may suffice. I have seen several cases of mild kidney infection which were diagnosed as appendicitis and other abdominal lesions. I recall one case in particular where a practitioner thought for several days that the patient had either appendicitis or ureteral calculus. The X-ray examination was negative. The ureteral catheter obtained a large amount of pus in the urine which showed pure culture of the Neisser germs. After two or three irrigations with silver solution the patient made a satisfactory recovery.

I have seen two or three cases where abscess of the liver was mis-diagnosed. It was at first thought one of the patients had pyonephrosis

because of chills, fever and a palpable mass in the kidney region. However, the ureteral catheter obtained perfectly normal urine. Operation revealed an abscess of the liver.

I think it is well in this connection to lay some stress on epididymitis. "Gonorrheal" epididymitis of the right side with decided enlargement of the vas and with funiculitis may present almost a typical clinical picture of acute abdominal pathology, i.e., high fever, leucocytosis, abdominal pain, nausea and vomiting. In such cases, however, the clinical history of Neisserian infection and examination of the scrotum for involvement of the epididymis will usually make the differentiation; but I have seen cases where the practitioner was in doubt whether or not the patient had appendicitis.

Dietl's crisis with its syndrome of pain, nausea and vomiting, may be confusing; but modern methods of examination, carefully applied, should clarify the diagnosis. Palpation of the displaced kidney, the shadograph catheter and pyelogram will show the real position of the kidney.

W. E. Gardner: The paper of Dr. Casper is an interesting one from many standpoints, and while he made only a brief reference to those conditions pertaining to the domain of neurology, yet those conditions to which he did refer are important and should not be overlooked.

I was impressed by the statement that in a thousand cases studied by one authority, in which tabes existed, 65 per cent of them presented abdominal symptoms, and 17 per cent had actual crisis. In tabes, we may have gastric crises with pain and vomiting; intestinal crises with colic and diarrhoea; diaphragmatic crises with hiccough; and bladder crises. Any of these may be very much like the pain of acute abdominal disease, and certainly should be eliminated before any operative procedure is undertaken. The history of the case, along with an examination of the pupils, knee-jerks, and other symptoms of tabes, including a Wassermann of the blood or spinal fluid, will usually clarify the situation.

It would be impossible to discuss, here, the various causes of acute abdominal pain. Affections of the abdominal sympathetic or its large prevertebral ganglia, including the solar plexus, account for many important abdominal conditions, such as acute dilatation of the stomach; many of the symptoms of acute peritonitis; and the pain, constipation and high blood pressure of lead colic, in addition to the crises of tabes which have already been mentioned, and which may, also, be due to irritative changes in the various parts of the abdominal sympathetic.

In reference to other diseases of the spinal cord which may have been in the mind of the essayist, I know of no other condition which would produce the acute abdominal pain so much as tabes. In myelitis we may have the constricting belt-like sensations about the abdomen, as we do in tabes, but there is usually, here, a tendency to anaesthesia rather than pain. A tumor or local meningitis of certain portions of the cord might cause some pain referable to the abdomen. But the very great importance of the possible role of hysteria in accounting for some of the acute abdominal pains was not overlooked by Dr. Casper.

Pain of some sort occurs in nearly every case of neurasthenia, and in many cases of hysteria. The pains, here, are not due to any peripheral irritation as ordinary pains, but are of central or psychical origin, and have even been called a psychalgia. Hysterical pains may be referred to any part of the body, and it is only by a very careful examination, both local and general, looking for evidence of other hysterical stigmata, and the absence of real physical signs of organic disease that we can arrive at a definite conclusion. The diagnosis of hysteria is not always an easy one, as is sometimes believed, and should be held in reserve, always, until every means of detecting actual organic disease has been eliminated. All surgeons are, no doubt, familiar with the so-called "ovarian tenderness" which is so common in the left inguinal region, and which is found in male hysterics as well as in females. Pressure on such a spot, it is said, will sometimes produce a hysterical paroxysm. It has been called a "hysterogenic spot."

Pseudo-appendicitis is often difficult to diagnose on account of attacks of recurrent pain and tenderness in the right iliac fossa, with constipation and vomiting; and no doubt, in times past and in other cities, many abdomens have been opened in such cases with negative findings; but these cases usually have some right-sided hysterical hemi-anaesthesia, along with other evidences of hysterical stigmata, and with the advanced methods of diagnosis now employed I am sure that not many such mistakes occur in Louisville.

And, finally, there are some cases of traumatic neurosis, with severe pains referable to the abdomen, especially if the patient has been in a railroad or street car accident, and has suffered great mental shock, with perhaps only a slight injury to the abdominal wall. Such cases are essentially of hysterical or psychogenic origin, and I have no doubt but that the war neuroses will have produced a number of acute abdomens, without physical findings, when the records are complete.

J. Hunter Peak: I desire to call special attention to one point mentioned by Dr. Casper in his paper, i.e., differentiation between perforated duodenal ulcer, particularly when it occurs following the ingestion of a full meal, and acute

appendicitis. Quite often the differential diagnosis may be considered easy, but it is sometimes difficult. Of course the patient has an "acute abdomen" in either event. In my opinion the main point of differentiation is that the pain is more extreme in duodenal ulcer than in appendicitis. There is no pain nor physical suffering equal to that produced by perforated duodenal ulcer. Gravitation of fluid from the stomach toward the appendix induces pain in that region, and no doubt every surgeon has operated for acute appendicitis when the pathology was really duodenal ulcer. Fortunately, however, the incision being made on the right side duodenal ulcer can be just as satisfactorily handled as if appendectomy had not been originally contemplated.

A. R. Bizot: I would like to say for Dr. Peak's benefit that one of the last patients I saw with duodenal ulcer had absolutely no pain. It is recognized, however, that pain is extreme in the majority of instances.

Dr. Casper's paper suggests that we ought to criticise another surgeon when he opens the abdominal cavity and does not find the expected pathology, because differential diagnosis is sometimes impossible, especially in the so-called "acute abdomen." For instance, the patient may apparently have fulminating appendicitis, the physical signs being such as to warrant hastening him to the operating room for appendicectomy, and celiotomy reveals a healthy appendix. Of course in less urgent cases we migh delay and have the neurologist, the urologist and other specialists see the patient and make their investigations; but Dr. Casper's paper was on "acute abdomen" where ordinarily the operative work must be hastened. Even in acute cases, however, it is sometimes well to make **haste** slowly.

Every case of "acute abdomen" is a law unto itself, and we have no right to criticise the surgeon who does what he considers best in the interest of the patient.

O. O. Miller: I was pleased to notice Dr. Casper mentioned diaphragmatic pleurisy as simulating acute abdominal conditions. The parietal pleura and the other part of the diaphragm receive their nerve supply from the lower six intercostal nerves, from which segments are continued with the ilio-hypogastric from the first lumbar to supply the abdominal muscles and the overlying skin. The eleventh intercostal supplying the region over the appendix. In early pneumonias affecting the base of the lung and where the parietal pleura is involved the patient may complain of acute abdominal pain. This is principally noted in the upper abdominal zone. Firm pressure over the tender area does not increase the pain. A leucocyte count in such cases is of value, as in pneumonia it is usually higher (30,000 to 40,000 per c.m.), than in acute peritonitis.

In dorsal Potts' disease involving the lower dorsal vertebra not infrequently the child complains of pain in the adbomen. Another confusing condition is acute pneumothorax, especially that accompanying recent progressive pulmonary tuberculosis, in which the pleura is unprotected with adhesions, due to former pleurisy. In these cases the thorax becomes greatly distended with air, the diaphragm is forced down and the abdominal viscera displaced, causing in some cases severe pain, which gives a clinical picture of "acute abdomen."

M. Casper, (closing): As to Dr. Bronner's statement about kidney lesions and appendicitis oftentimes closely simulating each other. It must be remembered that the appendix is a movable organ and its anatomic situation may not always be the same. Bearing this in mind it can be readily seen how the diagnosis of kidney affections and appendicitis may sometimes be puzzling. The cecum may be abnormally located and the position of the appendix may in consequence be higher or lower than normal. I recall one instance where the appendix was in the right groin.

Hysteria and appendicitis may closely resemble each other. The hysterical patient usually travels from one doctor to another complaining of abdominal pain, and after visiting three or four the symptoms of appendicitis seem so pronounced and typical that the individual is ready to be operated upon. It is in that class of cases where operation does the surgeon great harm and brings surgery into disrepute—and it is not always the doctor's fault.

In regard to the confusion between duodenal ulcer and appendicitis: Doubtless every surgeon has opened the abdomen for acute appendicitis and found a perforated duodenal ulcer. This mistake may easily happen because the contents of the perforated duodenal ulcer gravitates downward along the colon to the appendiceal region; in fact, the appendix is usually more or less acutely inflamed if the ulcer has been perforated for several hours. Removal of the appendix is therefore advisable as a safegnard in addition to closing the perforated ulcer opening.

Dr. Bizot's remark that every acute abdomen is a law unto itself is quite correct, and that is one of the reasons why my paper was written. I knew it would open a wide field for discussion. Little information on the subject is to be found in text books; it is simply a matter of experience and judgment, and the surgeon must decide what is best for the patient.

Acute abdomen presents so many different angles and atypical cases are so frequently observed, that our combined experience will make each of us a better diagnostician,—and that was my principal aim in writing the paper.

OBSERVATIONS ON INFLUENZA.*

By Ben Carlos Frazier, Louisville.

So long as the influenza epidemic continues there is an excuse to discuss it, this being the most virulent and prolonged epidemic the United States has ever known, and the mortality rate higher than from any epidemic that has ever been known in this country. I will not burden you with statistics, as it is very difficult to obtain reliable data on conditions like this because there is a tendency to attribute everything to influenza.

In spite of the high death rate and the widespread and continued epidemic, the people will not take it as seriously as they should. This is perhaps the cause for continuance of the scourge, although I must frankly admit I am unable to say that this is the answer. I do believe, however, that we become careless about reporting cases and insisting on quarantine as well as assisting the health department in maintaining quarantine. It is hard indeed to enforce quarantine, and anyone who goes out after exposure is a menace in the degree that he or she may at any moment become ill, starting with a chill and fever and showing signs of infection, thus menacing those with whom they are associated. Some individuals seem to have a natural immunty, and others do not acquire it even by having an attack. Like all contagious diseases, there are exceptions to the rule, one attack does not always give immunity. I am led to doubt the efficiency of the mask, the spray, the gargle and vaccine.

The outbreak all over has been very similar in spite of the various methods of handling the situation, and the mortality is not strikingly different. I have never been able to understand the immunity some individuals seem to possess. It has been said that the negro has a certain immunity against influenza. I see so few negro patients that I have not tried to draw any conclusions, but it seems from reports and my slight observation that negroes have some degree of natural immunity against the disease. The explanation may be that because of their fear of it they really have not been exposed as much or as continuously as the white race and consequently not so many cases have been seen. The contagiousness of influenza has never been questioned and the period of incubation is known to be very short, certainly as short as twenty-four hours, and rarely more than seventy-two hours.

The various types to me are most interesting and puzzling. In reality some of the cases are so dissimilar that one is quite excusable for not making a diagnosis. For instance, in a family where all the members are stricken within a few days, one has no symptoms exceepting fever, prostration, anorexia, and dullness.—I mean dullness in the sense of being almost stupid, practically in coma; another has bronchial pneumonia with severe cough and bloody expectoration with or without cyanosis; still another has severe aching of the head and back, occasionally the legs, joints, etc. Here are three distinct types of cases with one common cause so far as we know.

In the first outbreak constant headache and backache in adults seems to me to be the most striking and constant feature, and one was seldom disappointed in the reply to the question, "What hurts you,"—"Oh, my head and back are almost killing me." Another constant feature prevailing in varying degrees was prostration, i.e., the inability to "come back" quickly to normal.

I am sure one fault a great many of us made in our early cases was to allow the patient to get about too soon after convalescing, or really to allow them to go out before they were truly convalescent. I know especially where paients felt it imperative to be up, some suffered either a relapse or I found the heart very unsteady and the general physical condition much below what it should be. And this leads me to discuss the heart conditions that have come under my observation.

I must say the myocardial cases that I have seen have not been satisfactory ones as a rule, though I have had some patients get through in good condition. I am anxious to have the members discuss some reports which I want to make this evening of cases I have seen during the last few weeks. These are of various kinds,—some died and some recovered.

H. H., a male aged thirty, had suffered repeated attacks of "rheumatism" with subsequent myocarditis resulting in a valvular murmur. He came to the Advisory Board the early part of last year and because he had formerly been a patient of mine I asked another member of the board to examine him, so there would be no possible prejudice in the case,—this member being Dr. Cuthbert Thompson. He, of course, discovered the slight murmur, and with the history of rheumatism the board believed the young man should be placed in the deferred class. This young gentleman, however, had some political "pull" and immediately secured a position at Camp Taylor as a bookkeeper, his former occupation. He served until the 20th of February when he was dismissed from the ser-

*Read before the Louisville Medico-Chirurgical Society, March 14, 1919.

vice, and during his time in the army he received all the vaccines that were given, including influenza vaccine in December and pneumonia vaccine about the middle of January. On the 22nd of February he developed influenza; he had a very high fever, reaching 105 degrees F., axillary, at one time; he had a great deal of delirium and cyanosis; he developed pneumonia the second day. He expectorated large quantities of bloody mucus and was extremely ill for a number of days. He made, however, a very good recovery and was beginning to walk about the room, when suddenly on the 12th of March, while bathing, sitting in bed he at once became very dizzy, quite faint, and had to be assisted as he appeared to be so ill. He became quite clammy, his forehead and body were bathed in perspiration, and I presume he had a slight dilatation of the heart. This morning he had a similar attack, though not quite so pronounced.

The next two cases are of unusual interest because of their recovery. Mrs. G., aged about thirty-two, whom I have delivered of two children and now being pregnant in the ninth month, was taken sick in October and had what I considered a typical case of influenza, having been infected perhaps by her husband who was ill first. She ran the usual course, extremely high temperature with great prostration, headache and backache, being in bed about ten days, no threatened nor attempted abortion. In January, about the last week, she was again seized with influenza, apparently being infected by her children who were both very sick, one of them having a mild bronchial pneumonia. She herself developed bronchial pneumonia; had an extremely high temperature; expectorated blood for several days, and when I thought she was beginning to convalesce, she was taken with violent uterine pains. I was called by her husband saying my services were needed immediately as he thought the baby was about to be born. I was just leaving the city and asked Dr. Edward Speidel to take charge of the case as the patient was in his immediate neighborhood and I thought he could reach her quickly. Much to my amazement upon my return forty-eight hours later I found that Dr. Speidel had been able to quiet her pains and she was on a fair way to recovery which followed uneventfully. Only to-day have I been called again to see her, and most likely she will be in labor within a few hours.

Mrs. V., was taken with influenza while nursing her husband and children. She was a young matron, having had two children previously, and was in her third month of pregnancy. She became violently ill, had pneumonia, extremely high fever, deep cyanosis, marked and continued delirium for days, and during that time she aborted. She recovered and has since been quite well. That was in December.

Fred, aged nine, bedridden heart case I have had under observation at the Childrens' Hospital for several years, without much improvement and little hope for any. He was stricken with influenza, had high fever, marked cyanosis from the beginning, and died the third day without complications,—simply heart failure.

Another boy at the Childrens' Hospital, aged six. His first symptoms were those of acute laryngitis (croup) with exceedingly high temperature (105 degrees F.), with marked dyspnea, recurring laryngeal spasms and continuous metallic coughing. The interesting part about this case was that during the height of his illness he vomited a number of worms,— eight large lumbricoids at one time. This boy developed a general pneumonia and died about the fifth day.

Mr. B., arrived at the Louisville Hotel from Cincinnati, having primarily come from Canada. He was taken sick in Detroit and his wife insisted that he stop there, but he would not. He went to Cincinnati where he became extremely ill. She tried to get him to stay there but he would not and when he arrived in Louisville the third day after the onset of influenza he was so ill that he was unable to walk. When I first saw him he had pneumonia with very marked cyanosis, pulse exceedingly bad and with a continuous and persistent bronchorrhea. He was delirious from the time I saw him and during the subsequent days, the delirium and cyanosis seemed to go hand in hand,—that is to say, when his cyanosis was less the delirium was less. This man from day to day said that he simply could not live, but under large doses of morphine and atropine with the continued administration of digitalis he maintained his uncertain condition, finally dying on the eighth day.

I was called Saturday night of last week to see Mrs. C., whom I had formerly treated for myocarditis. At that time she had marked arrythmia with constant auricular fibrillation. She had been under the observation of an excellent physician in Texas and had only recently come to Louisville. She knew quite well how to take care of herself so far as her heart was concerned. Upon reaching her bedside I discovered that she had marked dyspnea, high fever, rapid and irregular pulse, and a distressing asthma. The stethoscopic examination revealed moist rales all over the chest, both posteriorly and anteriorly. I, of course, gave a very guarded prognosis. Much to my gratification the following day she

was much better, but on Sunday she had a chill, the temperature was very high, she became absolutely delirious, and died Tuesday morning about daybreak. At autopsy it was found that she had pus all through both lungs and also a purulent pericarditis.

Mr. B., came to a local hotel about the 15th of December where I was called to see him and was met with: "Doctor, I am afraid I have influenza again and if I have I want to be immediately removed to the hospital or have a good trained nurse here." This gentleman gave the history that the 3rd of October he began taking vaccine for influenza, that the latter part of the month he was taken sick with the disease (influenza) and was quite ill for a week or ten days. He developed the usual symptoms, headache, backache, bronchitis, with a large amount of expectoration usually streaked with blood, temperature as high as 104, during the next few days after I was asked to see him. He made a good recovery and left the hotel the morning of Christmas day.

CONCLUSIONS

1. Influenza is a progressive disease, and may involve any portion of the anatomy:

2. It is usually accompanied by marked cyanosis:

3. In most cases it is attended with and followed by extreme depression and weakness:

4. Convalescence is slow and unsatisfactory, especially in the middle-aged and elderly:

5. The first outbreak attacked mainly those in the first, second and third decades; but the present epidemic seems to be no respector of persons, the aged suffering to a marked degree:

6. The prognosis should be guarded in all cases, and is especially grave in patients with pneumonia and those showing primarily a nephritis, or where nephritis seems to have been a sequel:

7. The treatment is purely symptomatic.

DISCUSSION:

F. C. Simpson: Our experiences have doubtless been similar in cases of influenza recently seen. The earlier epidemic differed in some respects from this later invasion, at least backache and headache are not so common as formerly. In many cases the patient complains of severe abdominal pain without any discoverable disturbance in the intestinal tract. In others the patient has all the other characteristic symptoms of influenza excepting fever. I now rarely see an influenza patient with temperature above 102 degrees F. unless some complication has developed; and pneumonia is less common than formerly although statistics show that pneumonia is still causing many deaths.

I have noted some very interesting cardiac complications, not such as we saw in the epidemic of 1890 and 1891, but principally myocardial troubles, weakness, rapid heart action, etc. I have seen a few cases of cardiac dilatation which developed suddenly after the patient was up and walking about. I had an experience of that kind recently. A week after recovering from pneumonia a man walked down stairs and fell unconscious in the hall. He could not be moved for about forty-eight hours on account of the danger of complete cardiac failure. His condition was serious for over a week. Unfortunately pneumonia recurred on the same side followed by a pulmonary abscess.

I would like to ask if pathologists have determined just what organisms are causing these later cases of influenza. They are different from former cases both in onset and termination, and the causative factors must be different from those operative in October and November, 1918.

I have seen two or three cases of bronchial asthma preceding or accompanying influenza in people who had formerly been subject to asthma but had been free of attacks for a year or more. I remember one woman particularly who had not suffered an attack of bronchial asthma since a nasal operation was performed four years ago. She had a very decided attack of influenza accompanied by asthma which lasted for ten days. She could not assume the recumbent posture and could not sleep, but the attack finally subsided and she made a satisfactory recovery.

During the last few weeks the most pronounced symptom noted in influenza patients has been excessive weakness with great prostration. Cardiac complications are milder in type than formerly, and pneumonia is less common than in the autumn epidemic.

Another thing I have seen recently which was not observed in former attacks, and that is an enlarged spleen. I do not know that anybody has ever called attention to this matter, but in four cases the spleen was decidedly enlarged. The attack subsided after a week or ten days and the spleen became normal in size. This was a new experience to me and I do not recall having seen it mentioned in the literature.

I am aware of no routine treatment for influenza which is satisfactory; we merely have to treat the symptoms as they arise. I have never used the vaccine method.

Gavin Fulton: The subject of influenza is of the greatest interest to every doctor at the present time. In severity the disease may vary from an ordinary cold to virulent broncho-pneumonia with bloody expectoration. I think many cases are now diagnosed as influenza which we used to call acute coryza, etc., the patient being

practically well within twenty-four to forty-eight hours.

Influenza manifests itself in so many different ways that it is sometimes difficult to make a positive clinical diagnosis. During the last outbreak I have seen a number of cases in children from fifteen months to five years of age. These children appeared extremely ill, they were prostrated and weak, they had fever, etc., but they all eventually recovered.

I believe if you would get one hundred doctors together, you could get one hundred different opinions in regard to the treatment of influenza, excepting upon one point, i.e., we are all agreed on the necessity for absolute rest plus adequate nutrition. As a cardiac stimulant my experience has been that digitalis is unsatisfactory, and I believe it does harm rather than good. The various alkalies are indicated in the majority of cases. Personally I believe in liberal doses of whiskey; even after the development of broncho-pneumonia alcohol is of value as a cardiac stimulant, as a means of lowering temperature, in preventing collapse, and in promoting resolution.

I recently saw a child three years old with pneumonia to whom whiskey well diluted was administered in one to two dram doses at three hour intervals for three or four days followed by recovery. I have never yet seen an instance where I thought whiskey did any harm in influenza or pneumonia.

My routine treatment of influenza is to first thoroughly cleanse the primae viae, then enjoin complete rest and give the patient concentrated nourishment with alkalies, whiskey and a little aspirin or phenacetin to relieve pain. I think whiskey is the best stimulant we have under these circumstances.

I recall a young woman the mother of a three months' old baby who became ill on January 29th, 1919. She presented the typical picture of influenza,—backache, headache, fever, rapid pulse, foul odor of the breath, etc. Seven days later she was apparently convalescent, her temperature being about normal and pulse 90. Then she had a slight chill and the eighth day bilateral basal pneumonia could be demonstrated. Six days later she became cyanosed, delirious and dyspnea was pronounced. We then began giving her oxygen which was continued for six and a half days. During this time she apparently improved, delirium and cyanosis subsided, she would answer questions clearly; but she finally died of pulmonary edema on the seventh day. I have never heard of another case where oxygen was continuously administered for over six days.

Stuart Graves: I am unable to answer Dr. Simpson's question because the time is too early for a report to be available on the bacteriology of the last outbreak of influenza. I am of the opinion, however, when the reports arrive they will show mixed infection as in the previous epidemic with decreased virulence of some of the organisms.

An interesting question is, has the real cause of so-called influenza been discovered? There are many well informed men who believe the real etiologic agent of this epidemic has not yet been found. The streptococcus, pneumococcus, Pfeiffer bacillus, micrococcus catarrhalis and, more recently, the tetragenus have been reported as secondary invaders.

C. W. Dowden: One statement made by the essayist pleased me greatly, i. e., his contradiction of the newspaper articles emanating from the health authorities concerning what may be accomplished by the use of vaccine in influenza. This afternoon I talked with a trained nurse who had just left a family in which there had been five cases of influenza, three of the patients developing pneumonia, and I knew she had nursed in another family recently where there had been two cases of pneumonia. I ashed her if she knew how many of these people had received prophylactic doses of vaccine, and she said "every one of them who had pneumonia."

Dr. Frazier mentioned several types of influenza, and laboratory workers have found even a greater number of types. One man will find the Pfeiffer organism in only twenty-five per cent of cases, another will find the streptococcus, and another some other organism predominating. We know, of course, that there are different types of typhoid fever; one with constipation, and one with diarrhea; one with a flat abdomen, and one with distension; one with cerebral symptoms and one without, etc.; all of which shows that a variety of symptoms may be produced by the same organism. However, it seems to me that the most which may be said at present of influenza is that the disease is caused by an extremely virulent toxin of uncertain if not unknown origin. I do not believe the responsible organism has yet been discovered; but regardless of the great variety of manifestations presented several symptoms have remained fairly constant, i. e., slow pulse, leucopenia, vasomotor paresis, etc., which induces the belief that the same organism is responsible in every instance.

In uncomplicated cases of influenza the pulse is usually slow, out of all proportion to the other symptoms; we have leucopenia and lessened coagulability of the blood, we have in the majority of cases a more or less definite paralysis of the vasomotor system. Where there is a slow pulse, a lessened coagulability of the blood, a decrease in the number of leucocytes, vasomotor paralysis, etc., you have all the conditions favorable to hemorrhage. In the latter stage of influenza the great development of pulmonary edema, and if digitalis be adminis-

tered the patient is simply drowned in his own secretions. It is my belief that many patients in the later stages of influenza have been killed by the administration of digitalis, because the myocardium is not damaged to the same degree as other organs and is usually competent to the last.

Since the causative organism of influenza has not been demonstrated, how is it possible to produce a vaccine which will prevent the disease? It has been shown that mixed vaccines do not prevent the disease nor do they lessen its severity. A recent report shows that in a certain western institution where no influenza had then appeared, three hundred and ninety of the inmates were given vaccine, and the same number were not. There were a greater number of cases of influenza and pneumonia and also more deaths among the vaccinated than the unvaccinated. All the usual types of organisms,—pneumococcus, streptococcus, Pfeiffer bacillus, etc.,—were used in preparing the vaccine.

A man needs his resistance to fight influenza as well as other diseases. If any effect is to be expected from prophylactic doses of vaccine enough antibodies must be produced to cause immunity; and it is my opinion that in doing this the susceptibility of the individual to the disease is increased through the lessening of his resistance. However, I believe the production of immunity possible by the use of serum or whole blood of a person convalescing from the disease. Recent reports show that results have been favorable from this method of procedure.

H. E. Tuley: We have had constantly at the Louisville Public Hospital about one hundred and thirty cases of influenza during the last epidemic. In the outbreak during October and November, 1918, the majority of the patients were young adult. In the present epidemic there has been a large proportion of children and also patients considerably beyond the age of forty years. For example, we admitted from the Home of the Aged and Infirm within the last week thirty-seven cases. Again, we have had in this epidemic a much larger proportion of colored people. Our capacity has been taxed to the utmost in taking care of them and the mortality among this class has been very high. During the twenty-four hours of yesterday I signed five death certificates, all the patients being over fifty, and all dying from influenza or its complications.

In the present epidemic the question of dismissing the patient from the hospital after apparent recovery has disturbed us a great deal; that is, when is it safe to allow these patients to leave? Myocardial changes produced by influenza are very marked in the aged. A case was brought to our attention a few days ago which illustrates this point. A man had no elevation of temperature for one entire day, but his prostration continued extreme; the next day he was allowed to sit up; the third and fourth days his temperature was still normal. We then sent him back to the Home for the Aged and Infirm and he died that night. He was apparently in perfect condition when he left the hospital. It has been our rule to allow the patient to sit up one day, and if the temperature remains normal for three days longer he is dismissed from the hospital. The social service department has reported several relapses when patients were sent home under this routine, so it is a hard proposition to determine what is a safe rule to be followed in dismissing influenza patients.

The mortality among children has been greater than in the previous epidemic, principally from broncho-pneumonia. We have had some very pitiful cases; in two instances both the mother and father died, the first leaving one child, and the second two children. We have also had a large number of deaths among old people both white and colored. Influenza is a hydra-headed affection and we do not know what will happen from one day to the next, and while the temperature range in this epidemic has been decidedly lower than in the one of last autumn, the mortality has been just as high.

In regard to prophylactic doses of vaccine: The proportion of cases of influenza and pneumonia among nurses in the hospital who have had vaccine shows the result to be favorable. Only one nurse had pneumonia following influenza, and I believe she was not given vaccine.

I. A. Lederman: Nothing has been said by the essayist nor by those who have discussed the paper with reference to the ophthalmological and the oto-laryngological complications of influenza. Very few patients with ocular complications have come under my observation. I have seen simple conjunctivitis persisting after recovery from influenza, and some cases of iritis, choroiditis, etc., have been observed.

As to the prophylactic use of the nasal spray: Despite the advice given by the health authorities that everybody should use the nasal spray as a prophylactic, I think the practice is absolutely pernicious. I cannot see the logic of introducing antiseptics or mechanical cleansing agents into normal nasal passages. It is well understood that the normal nose possesses a certain amount of resistance, and promiscuous spraying will necessarily lower this local resistance against infection. There is one exception to be made to this rule, i. e., the spray is probably useful in individuals who have been demonstrated to be carriers of infection.

Those of you who heard Dr. Luke's report before the Jefferson County Medical Society will recall he stated that in sixty to eighty per cent of post mortem cases of influenza sinus infection was present. In the discussion I stated that I

had seen in the epidemic of last autumn very few sinus infections, but had seen a great many patients with middle ear abscesses. On the contrary, however, I have seen very few middle ear abscesses in this later epidemic, but have seen a number of cases of acute sinus infection accompanying and also following influenza.

I have seen very few patients with epistaxis as a complication, but of course that is no index to the number of cases which have occurred; it merely means there have been only a few requiring the attention of the specialist. In one case the hemorrhage was copious and the nares on one side had to be packed; a day or two later I was recalled to execute a similar procedure on the other side. That was the only case coming under my observation where serious hemorrhage occurred. I understand, however, that a recent report by a Philadelphia man shows a large number of cases of epistaxis in influenza.

I would like to have some one explain the reason for so many painful sore throats following influenza without definite evidence of pathology. The throat may be a little congested, the mucosa slightly glazed, the follicles moderately enlarged, but the pain is out of all proportion to the clinical findings, and the patient recovers slowly.

Another after-effect of influenza which has come to my observation is a persistent tracheal cough. The larynx and pharynx are apparently normal and examination of the chest is negative, yet the patient has a tracheal cough which persists for a long time.

Major Littig mentioned before the Jefferson County Medical Society that he had seen several cases of severe infiltrating laryngitis following or accompanying influenza. I have seen few cases in which the larynx was sufficiently involved to require especial attention. The cases I have seen have merely been catarrhal laryngitis in connection with the usual naso-pharyngeal complications.

I have observed one case where influenza was preceded by spasmodic croup, occurring at night without fever, and the child appeared perfectly well the next day. On the following day, however, typical influenza developed with temperature of 105 degrees F. The croup disappeared within twenty-four hours and did not recur. An interesting feature was that another child in the same family became ill on the same day but did not have preliminary croup. The one with croup was quite ill but recovered.

I have seen one child with paralysis of the external rectus muscles and also slight paresis of accommodation. It resembled the type recognized as post-diphtheritic paralysis. That is the only case of the kind I have encountered, but it is one of the complications which may occur in any of the infectious diseases.

J. Rowan Morrison: I suppose I am like everybody else, as I do not know much about influenza. I have discussed the matter with many doctors, and they do not seem to know much about it either.

I saw an article in one of the medical journals a few days ago in which the author claimed influenza was a "hand-to-mouth" disease, i.e., that we do not get it through the nose, but we get it on our fingers and it is transferred to the mouth in that way. This statement was supported by statistical evidence, and there may be something in it. We know doctors do not often have the disease, and I believe most doctors are more careful about washing their hands than other people.

Like everybody else I have used digitalis in the treatment of influenza, and have about come to the conclusion that it does harm rather than good. I think atropine is more advantageous than digitalis.

In the majority of instances I believe cyanosis is due not to myocardial degeneration but to the effect of the toxin on the nervous mechanism. There is vaso-motor paralysis and improper circulation of the blood. Just what produces the extreme weakness and prostration no one seems able to explain. There must be early in these cases some intense intoxication which produces a decided effect upon the nervous system. The patient does not show any true myocardial changes as a rule.

I have never been able to arrive at a definite conclusion about the use of vaccines. At present everybody seems to hold a different opinion. In one locality vaccines are extensively used and the reports are favorable; in another the reports show that vaccines are absolutely worthless. During one week recently I had five cases of pneumonia, and of these three patients had been given vaccines. I have seen a number of other patients who had been given the so-called "pneumonia vaccine" without effect. Blood serum from a patient convalescing from influenza might be worth while as a prophylactic,—but this is an entirely different proposition. The question of vaccines in influenza and pneumonia is still in a chaotic state.

B. C. Frazier, (closing): A great many interesting features in connection with influenza have developed during the last few months, but I could only mention a few of them in a short paper.

I am still at a loss to know just how to handle these cases, and am doing now just what I did in the beginning along the line of treatment, i. e., practically nothing excepting the secure elimination, keep the patient on a liquid diet for a few days, insist upon complete rest, treating the symptoms or complications as they develop.

So far as the other members of the family are concerned, I do nothing in a prophylactic way.

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NEXT MEETING, ASHLAND, KENTUCKY.
September 23, 24, 25, 1919.

COUNTY SOCIETY REPORTS

Harlan—The Harlan County Medical Society met in Harlan, on Saturday, March 29, 1919, at 8 P. M.

A. C. Foster called the meeting to order, after an enjoyable supper with the doctors' wives and all the nurses of the county present. A short session was held.

Several new members were added to the society.

S. E. CROUCH, Secretary.

Harrison—The Harrison County Medical Society held its regular monthly meeting at Elks Club room, May 5, 1919. This was the most interesting and instructive meeting since the organization of our society. Col. W. H. Goodwin, of the University of Virginia, and Col. Louis Ransohof of the University of Cincinnati, were guests of the society on this occasion, also Drs. H. F. Clark and Kendall, of Falmouth. Twenty-one of our twenty-two members were present. Dr. Wells called the meeting to order.

J. M. Rees reported case of "Osteomyelitis of Astragulus," late operation.

Josephus Martin reported case of "Fracture of the Lower End of Humerus."

N. W. Moore presented case of "Ichthyoses Vistida."

Josephus Martin read a paper on "Pleurisy in Early Tuberculosis."

W. H. Goodwin and **Louis Ransohof** gave very interesting and instructive talks from their experience of "Wounds in Evacuation and Base Hospitals in France," during their service overseas. These lectures were immensely enjoyed by every one present.

After the scintific session a social hour, with something to eat and trimmings. At this time we missed Dr. Givens more than any one who, on account of illness, could not attend. Every one left with a good taste in his mouth and a better feeling for his fellow practitioners than he had ever had before.

W. B. MOORE, Secretary.

Livingston—At the regular meeting of the Livingston County Medical Society the following officers were elected:

Wm. Gardner, President; Roy Woddell, Vice President; Edward Davenport, Secretary.

Eleven doctors were present and paid their dues for the ensuing year.

EDWARD DAVENPORT, Secretary.

Mason—At a meeting of the Mason County Medical Society, held April 25th, 1919, at the office of Dr. Lock, County Health Officer, there were present Drs. Lock, Howard, Davis, Quig-

ley, Taylor, Long, Yazell, Robb, McGuire, Hutchings and Smoot.

It is to be regretted that more of the Maysville and Mason County physicians were not present to hear an address delivered by Dr. J. E. Wells, of Cynthiana, Councilor for this district, as it was just such an address as Dr. Wells is able to deliver and such as would have been of material assistance and benefit to every physician of the city and county.

On account of war activities and influenza epidemic, the Society has not met regularly and many of the physicians in the county have, so far, failed to pay their State and County dues. It is earnestly requested that every one of these physicians who have failed to pay their dues, so so far, will send the amount to the Secretary-Treasurer promptly in order that the State Journal can be sent to them and that they may become active in the doings of the County Society. As Dr. Wells stated, there is no reason why the Mason County Medical Society should not become the equal of any society in the State, but it takes co-operation of all physicians to accomplish this muchly desired purpose.

A regular program for the whole year will be made out by the committee after the next regular meeting, to be held Wednesday evening, May 14th, at 8:00 p. m.

A. R. Quigley read a very interesting paper on "Placenta Previa," which was afterwards discussed by Drs. Taylor, Yazell, Howard, Wells and Lock. Dr. Taylor also reported two cases of "Acute Catarrhal Pyelo-Nephritis." Altogether, it was a very instructive and beneficial meeting and all those present seemed to enjoy the meeting very much.

P. G. SMOOT, Secretary.

Magoffin—The following officers were elected at the annual meeting of the Magoffin County Medical Society:

D. R. Skaggs, President; J. S. Cisco, Vice President; M. M. Price, Secretary.

After a general discussion the society adjourned.

M. M. PRICE, Secretary.

Nelson—The Nelson County Medical Society met Wednesday morning, at 10:40 at the office of Dr. B. E. Gore. Those present were the following members: Drs. B. E. Gore, H. E. McKay, R. H. Greenwell, S. A. Cox, W. E. Crume, of Bardstown; J. J. Wakefield, of Bloomfield; J. G. Powers, of Fairfield; H. S. Harned, of Boston; J. I. Greenwell, of New Haven; R. H. Williams and C. O. Moore, New Hope, and J. N. McCormack, Bowling Green; Irvin Abell, of Louisville; C. Z. And and W. H. Lucas as their guests.

The meeting was opened by an able address by Dr. J. J. Wakefield, which was highly complimented by all those present. At the close of the discussion the Society adjourned to Mrs. W. H. McGill's for dinner, where such an elegant feast as had never before been served to a medical society.

All present were profuse in their expressions of praise of the Banquet, as some members called the dinner, at the conclusion of which, on motion, a rising vote of thanks was tendered to Mrs. McGill.

The meeting was called to order by the president, Dr. Ben Gore, at the hour of 11 a. m., who said:

Gentlemen, we are going to be disappointed by not getting to hear from Dr. Spalding, and we will have to get along without him. We will now hear from Dr. Wakefield, on "Influenza, Forty Years Ago and Now."

J. J. Wakefield: Influenza first came to us in the year 1890 after it had prevailed in Europe the previous year. It reached our coast cities about the year 1890, and from these cities it spread rapidly from one communit to another until it became prominent in this country. The first cases we had of this dreadful disease, was in the fall of 1890, and I have never seen anything that spread so rapidly, and proved so fatal to patients. I never saw as much pneumonia in the same length of time, as followed the influenza epidemic in this country, in the fall of 1890 and during the winter months.

The disease is very contagious, and I believe some people still hold to the idea that it is spread through the air, but I am skeptical of this theory.

I believe that it is spread through personal contact. It is very interesting to run down the origin of these cases. I frequently as them. Where did you get this? And their answer is, "I don't know." "Have you been away from home?" "No, I haven't been away but there was a man here Sunday, but he didn't have influenza."

Gentlemen, I say that man did have influenza and the patient caught the disease from him.

I believe that the disease is spread by human contact and that the germ is confined in the air by the distance, by which one can sneeze, or cough it.

It is a disease that is so contagious, that it is almost impossible to control it.

I believe that we have learned a great deal more in this last epidemic than we learned in 1890.

Three years ago I saw a local epidemic in a school district along about the X-mas holidays, Some fellow affected that whole community. The fellow had possibly gone in there not knowing that he was affected with a contagious disease and did it unconsciously.

I believe that we are now in a position to control this disease, and prevent its rapid spread,

and I also believe that the people should be educated up to the idea that they can control that dreadful disease that has taken such an appalling toll of lives.

Whenever you see a case that you believe to be a case of genuine influenza, I believe that you should then quarantine that person.

I hope that there will be a thorough discussion of this epidemic at this meeting.

I have been very skeptical in regard to the use of vaccine. I used it last fall during the influenza epidemic. I was in a family where one member had been vaccinated. The remaining members were all affected except one member. I saw quite a few cases where persons who had been vaccinated had the influenza and it seemed to modify the attack.

I believe in the new vaccine, and believe that with it we will be able to control the disease.

C. Z. Aud: Dr. Wakefield, do you thing that the disease establishes its own immunity? Or will it ever establish its own immunity?

J. J. Wakefield: I don't think it does. I have known persons, who have had it two or three times in the same season.

Irvin Abell: Although I have had very little experience with influenza in this country it has been of considerable interest to me. I know nothing about it practically. Most of the influenza cases came to base hospital No. 59. Wards were set aside for influenza patients, and each member was separated by sheets drawn between the beds. Patients were given masks to wear, and we allowed no passing through the influenza wards unless absolutely necessary and then he too, must wear a mask. Guards were placed on duty to see that the windows were kept open.

I am sorry that I can't give you the exact figures of the influenza toll. I do know that they averaged over 200 cases per day from pneumonia, and that when pneumonia was following influenza that nothing could be done, if he was going to die he was going to die and if he was going to live he was going to live. The best way to cure it was not to have it.

J. G. Powers: Gentlemen, my experience with influenza has been very much like Dr. Wakefield's, I saw several cases where every member in the family was taken with influenza within a few hours, they looked like they had been sick for several weeks. I never saw a case of pneumonia in this, and all got well.

These cases were much more serious than those following after. Most of the people around Fairfield used the serum and I think got results. I have used the serum, Dr. Rodman sent me some, the Mayo serum, and I never had a case of pneumonia where I used the serum. My experience has been the same as Dr. Wakefield's, where I used the serum some would be affected and some would not have it at all. The only treatment that I know, is the serum treatment. I have used the stock treatment and the Mayo treatment and have gotten results.

C. Z. Aud: Gentlemen, I think we have just brought out enough work for two or three days' discussion. The first thing that a doctor should do when he has been called to see a patient is to make a correct diagnosis, and if he hasn't a correct diagnosis he never will reach his case. When I go into a case of influenza, what are my duties? My duties are, if I give a remedy, to give the right remedy, and if I don't know what to give I had better not give anything at all.

If you diagnose a case of infections disease, what are you going to do? It is something that affects the atmosphere, for instance, in a case of influenza, you may come in contact with the "flu" germ. Where does pneumonia get in? My answer is, through the air passages.

I was in New York in 1889, and had the "flu". I have never had it since. Did it establish its own immunity? If not, there is no use using vaccine, but, I believe that it does establish its own immunity.

You fellows think that I am an old man, but I take the position that if it does not establish its own immunity, there is no use using vaccine.

W. H. Lucas: I have had only about ten years' experience, but during the influenza epidemic I have treated cases where there were as many as three or four in a bed, and if one developed pneumonia, most all of them developed it, all in that bed, and sometimes all in the same room.

When I would go to treat a patient I would very often find all the windows and doors closed, I would open them but as soon as I would leave, if there was one of the patients that was able to walk to the window, they would close them. Naturally some of these patients died. I treated a little over 800 cases, and there were many that I could not reach. I myself never had the disease. I took four doses of serum, a dose every four days, then took one ever two weeks, a dose of the same stock serum.

I got as much fresh air as possible, and as much nourishment as I could. In the case of my druggist, he, himself, did not have it, he stayed in the same room with the pharmacist who had the "flu" and did not have it, he had taken the serum.

I knew of another case where a merchant's family of three children and his wife all had influenza, and he, himself, never had it. He had taken the serum.

I had only one case to develop pneumonia where the patient had taken the serum treatment.

H. S. Harned: As to the serum, my experience has been very limited. I used the stock vaccine, and I have had no pneumonia at all following the use of the serum.

Although there has been very little said about

the treatment, I think that with the serum, we will be able to control the disease in the future. I thank yon.

H. E. McKay: There have been a great many points in the discussion of influenza. In 1889 and 1890 there were four types of "flu". One is a fever type; some followed by pneumonia, some by meningitis, some by lung trouble, some by hemorrhage, and some only by a high fever. I have taken stock vaccine. I also used a great deal in treating patients. I did not see one patient who used the serum have a bad case of "flu", and I gave a little over 200 treatments. Some developed the "flu" but none developed pneumonia. I used the Mayo serum.

I took one dose of serum every twenty days. I think that it produces an immunity, and that is the point that I would like to hear some of the other doctors discuss.

I have failed to see a single case, a single person who has had "flu" develop another case. In 1890 we recollect that it was the older people who were attacked by influenza. Last year and this year we have had very few of the older people affected by the "flu." Very few of the older people have had it.

I believe that with our serum we will be able to control it in the future.

In our community I find that where you go into a family and tell them that they have a contageous disease, they seem to think that it is a disgrace to have a card put up on their door, and I don't thing that the doctors have been as insistent as they should have been.

As to treatment, we all know that in the pulmonary type and in the fatal cases nothing has ever been done. Elimination is all that we can hope for in fatal diseases.

J. N. McCormack: I have had, Gentlemen, an opportunity to study this disease in a very broad way. I have spent most of my time in Louisville during this epidemic. The first cases that occurred in Kentucky were in Bowling Green. A battalion of soldiers from some camp in the South came through there one day and were given refreshments. All of them seemed to be sick, and the people crowded around them because they were soldier boys, and naturally felt sorry for them. In less than two weeks we had about 600 cases in the county. The disease spread from Bowling Green to Glasgow. Tracing the origin of the disease is very interesting. A young woman was in church attending services there, she was coughing and sneezing, and when the service was over the people collected around her because she seemed to be sick, inside of two weeks there were 250 cases, including the doctors and in that community there were twenty-nine deaths.

A young man came to Barboursville, way up in the mountains, and he was quite sick when he got there. There were 40 of the neighbors there to welcome him home. Every member of that family and of these forty people had "flu", and it spread all over that county. You can just trace them from case to case. We had about 600,000 cases in Kentucky, and out of those we had over 11,000 deaths, we have never had anything like it in this country. There should be a hospital in every county seat. One would hardly be enough for Bardstown.

I discussed this with the Red Cross when Mr Taft was president, in an effort to get the Red Cross to assist in getting the hospital system for every county, and with a hospital in every county seat. I think that you will be able to control influenza in time.

Now, as to the vaccine. I went to Chicago and listened to the great lecturers. I listened to Rosenow, and he was very conservative. He said, "We have no remedy unless this serum will do it.

I don't believe that the same serum should be used in Kentucky that is used in Mississippi, on account of the difference in the climate.

I was at Camp Taylor when the epidemic was there, and I can say that I never saw anything like the sick people in that camp, and in Philadelphia and in Baltimore it was very fatal, while in New York and it was not nearly so fatal. Rosenow said to me, "Serum from the locality or from the family itself, or that it would be very much better to get your start from the cases in Kentucky," and I attempted to do that, but the epidemic was right on us, and we used the Mayo serum. We sent out 750,000 doses and nearly every dose was used. We asked the doctors not to make a report until all the cases had come in, and we had excellent results, without a case of pneumonia, and we have had but one death, and that was a druggist at Frankfort.

I don't believe very many people have the slightest conception of the work accomplished. We sent forty-six doctors to Camp Taylor, and we sent out 215 Red Cross Nurses and ninety Sisters of Charity, and they went wherever we sent them. We sent a great many of them to Union County. We sent 1195 doctors. We didn't have the money, so I went up to Cleveland and got the money.

A dream of a life-time has come true to me. We are having calls for doctors every day, but they are not willing to give up positions in the Public Health Service to take them. We completed arrangements yesterday and within six weeks the State Board of Health will be moved to Louisville, and we are opening a school for health officers.

I am very anxious to hear Dr. Abell on his experiences abroad and I move that we give him the remainder of time.

C. Z. Aud: The following questions were asked the members of the meeting by Dr. Aud, in regard to the Association duties:

Q. How do you make your meetings useful, and what would you do in the future to make your meetings useful?

A. by Dr. Rodman: The only way I know is to encourage the physicians to attend the meetings.

Q. You generally get a man who is known to the association to read a paper, and then if yon don't do that you report cases, is that right?

A. Yes, sir.

Meeting adjourned for lunch at 12 A. M.

Motion made that they hear Dr. Abell.

Irvin Abell: It has been my good fortune to spend most of my time during the war between the United States and Germany, and also to spend part of my time in the Arrogoyne sector, and seeing aeroplane fighting, and my time will be devoted to that. If a man should fall overboard on the way across no attention was paid to him. His life was nothing as to the lives that would be endangered by stopping and attempting to pick him up, owing to submarines.

When I tell you that 1153 patients were admitted to our hospital, it is a physical impossibility to operate on 1950 patients in twenty-four hours, but, we did that by having a number of tables numbering from 12 to 18 in an operating room, and each of these tables was manned by what is termed an operating team. Each of these teams was given certain work and trained to do this special work, and in this manner we operated on a great many more patients than would otherwise have been possible.

Out of 240 patients having their lungs operated on there were only six deaths. I think that most of us would be ready to discredit such a statement, but that was the old idea.

The most horrible suffering of the patients was not from wounds received in battle, but from the enemy's gas. If a man is wounded in battle and is brought to the hospital for treatment his pain can be relieved by injecting morphine, but there is nothing that can relieve the suffering of one who has been gassed, he must suffer until death relieves him. I have seen them suffer for twenty-four hours and there was nothing that we could do for them. The most horrible of all the enemy gases was the mustard gas. I don't believe that any man who has ever been gassed with mustard gas will ever be worth anything, or ever be physically equal to any manly occupation at all.

The Germans also used a gas which caused the person to sneeze, and if he ever got a scent of this gas he would never be able to get his mask on before they could send over their poison gas.

The mask was very uncomfortable and oftentimes the soldier would discard it while marching. It also became very filthy after it had been worn over an hour at a time. This caused many of the soldiers to be caught with their masks off.

J. I. Greenwell reported the following case: This was a case of pneumonia following "flu". Mrs. H., age 26, developed pneumonia about the fifth day; the "flue" ran an ordinary course and pneumonia until the seventh day, when she miscarried. At the time of her miscarriage she was from 2 P. M. until abont 12 o'clock the next day without attention. She ran an ordinary case between life and death for several days and finally pulled through.

C. Z. Aud: If any of you can make a diagnosis hold up your haud. How did he make his diagnosis? That is just the kind of cases I have heard reported for years. Are you benefited any by hearing that report? Then what is the use spending your time and my time hearing such reports. Now, I have it in for the medical society. I say stay at home if you cannot do better than that. Everything that is said there is reported.

H. D. Rodman: Dr. Aud, I have been secretary of this society and I have never sent a report to the Journal that has not been published, every case I ever sent was published.

I wish to say a few words in regard to Dr. Aud's just criticism. I don't agree with him that we don't improve ourselves by such meetings as we have, and I think that the doctors of to-day are much better than they were fifteen years ago, about 100 per cent. better. We are better prepared to practice. One man always has something at a meeting that the other has not had, and they can discuss that although it may not be so scientific, but they are always beneficial, but as I said before we are going to try and do better, and see what we can do in the future.

We have done the best we could to-day and will try to improve in the future; and we want to thank you all for being here to-day and invite you back.

C. Z. Aud: Dr. McCormack, he says you are 100 per cent. better. Don't you think he would be 1000 per cent. better if he had followed my directions?

J. N. McCormack: The medical societies have never been one-tenth as united as they are to-day.

C. Z. Aud: I make a motion that the Association have one hour quiz each time they meet.

Accepted by the committee.

J. I. Greenwell read a paper on "Poison," which was enjoyed and appreciated by all present, all agreeded with him.

Taylor—The Taylor County Medical Society met in Campbellsville on Thursday, April 17, 1919, at 3 p. m. Present, Drs. E. L. Gowdy,

President; W. R. Elrod, J. L. Atkinson, F. I. Buckner and C. V. Heistand.

E. L. Gowdy reported a case of typical lobar pneumonia with some very interesting complications.

J. L. Atkinson reported a case of compound fracture of tibia, which occurred some 20 years ago, the site received an injury about 10 years ago and some spiculae of bone worked out. A few days ago this site presented all of the symptoms of inflammation—heat, redness, swelling, pain and impaired function. The pain was very hard to relieve—even with pretty heroic doses of an opiate. On opening, the doctor found the lower fragment overriding the upper, a small opening emitting pus. Curette was used with apparent good result.

F. I. Buckner, who only recently returned from France, read a very interesting paper, giving a detailed account of his work from the time he reported for duty to the signing of the armistice. This paper was very interesting and instructive.

C. V. Hiestand was elected Delegate to the State Association meeting.

The society adjourned to meet Thursday, May 8, 1919.

C. V. HEISTAND, Secretary.

THE FORUM

KENTUCKY SANITARY PRIVY BECOMING POPULAR.

Tacoma, Wash., April 17, 1919.

Dr. J. N. McCormack,
State Sanitary Inspector,
Bowling Green, Ky.

DEAR SIR:

The United States Public Health Service has recommended to us the installation of a privy of the Kentucky type, stating the State Board of Health has gotten out a bulletin on the subject, giving details.

If you will send me two or three copies I will be greatly obliged.

Yours truly,
I. B. RICHARDS,
General Superintendent.

The isolation of patients suffering from influenza should be practiced. In cases of unreasonable carelessness it should be legally enforced most rigidly.

NEWS ITEMS AND COMMENTS

In view of the termination of the war activities of the General Medical Board and Medical Section of the Council of National Defense, Secretary of War, Newton D. Baker, who, as Chairman of the Council, appointed the members of the General Medical Board, has written a personal letter to each of the seventy-five prominent physicians and surgeons comprising the Board, expressing appreciation for their services and thanking them on behalf of the government. Dr. Franklin Martin, Chairman of the General Medical Board, has also written thanking the members of the State and County Committees which for two years have worked under the direction of the Board.

"In terminating the relations between these organizations and the officials with whom they cooperated and worked so effectively," said Dr. Martin, "while one cannot complain that the war is over, yet a feeling of regret must inevitably arise at the severing of such close connections engendered by the friendship and comradship that are the natural outgrowths of such import- and associations."

The 32nd Annual Convention of the American Association of Orificial Surgeons will be held September 15, 16, 17, at the Congress Hotel, Chicago. The forenoons will be given to operative demonstrations at the hospital.

The program will be replete with practical addresses, essays and papers by prominent Orificialists. The clinics will be interesting as usual.

For further information address Dr. Paul C. Goodlove, 504 Broadway Central Building, Detroit, Mich.

"Procaine for Local Anesthesia in Surgery, the Specialties and Operative Dentistry" is the title of a new booklet by Dr. F. H. McMechan, Editor of the American Yearbook of Anesthesia and Analgesia. It is an editorial abstract of a series of articles on local anesthesia prepared by Doctor McMechan, and presents in simple, boiled down, yet detailed style the advantages of Procaine over other local anesthetics; the various solutions and combinations used and how to prepare them from marketed products; indications and contraindications; and the technic for its use in spinal, sacral, venous, ophthalmic, rhinolaryngologic, and dental anesthesia. A number of excellent illustrations ad dto its value.

This booklet may be had free by any physician, hospital superintendent, surgeon or dentist sending his request to The Abbott Laboratories, 4757 Ravenswood Ave., Chicago, Ill. Everyone who secures it will find it distinctly worth while.

The Abbott Laboratories are making Pro-

caine under license from the Federal Trade Commission and supplying it in standard market packages under the well-known guarantee of purity and accuracy.

Nineteen American women doctors are now in the Balkans, assisting the American Red Cross in its work of caring for the sick and destitute. These doctors are from the American Women's Hospital at New York and are located in Serbia, Montenegro and Albania. Already their work has earned the warmest commendation of the government. Some of them have received decorations or been cited for conspicuous service among the soldiers and refugees.

MEDICINE IN THE NEW WORLD OF PEACE.

We have frequently emphasized the fact that medicine and those who practice it can never be the same after the war as before. We fully recognize that we are in the presence of a great social upheaval whose effect throughout the world will probably surpass even that momentous event known as the French Revolution. We can see only dimly whither we are tending, but it is at least evident that civilization is moving rapidly, whether down a steep place into the sea or, as some believe, up into the heights of the Promised Land. In this movement the medical profession is to a degree caught in the sweep of forces beyond its control, but it is also to a large extent potent and responsible for the part it shall play in the new era dawning on us. Many individual physicians have been more or less completely, if temporarily, uprooted by mobilization for war, and the whole medical profession, like many other professions, has been jostled out of its stability and routine. It is a time to many for strenuous readjustment; it is also an unequaled opportunity for surveying the future of medicine and formulating plans for a rational development. One thing is certain: that no limited considerations of self interest are going to satisfy either the bulk of medical practitioners or the public they serve. The practice of medicine will more than ever be regarded not merely as a means of earning a livelihood but as an essential service to mankind.

It would not be desirable to consider here all the possibilities of change, even could we envisage these possibilities. But there is at least one aspect of medicine that the future is very certain to bring still more into the foreground. This is the side of medicine that is concerned with the prevention of disease, the preservation of the public health. Like many truths that have become wearisome through reiteration, the doctrine that from the standpoint of the community the prevention of disease is more important than its cure has come to sound dully on our ears. It has been said so often that many of us feel that we have done something about it. And yet every student of public health knows that hardly a beginning has been made in the application of our existing knowledge to the solution of public health problems. Available information is not utilized; suitable procedures are not carried out at all or are carried out wastefully and inefficiently; the opinion of the amateur or of the facile newspaper hygienists has as much weight with the public as the opinion of the expert.

These are all familiar conditions, but the medical profession has thus far failed to consider the situation seriously enough. The creation and proper maintenance of a national department of health would undoubtedly help toward the more general recognition of the importance of preventive medicine, but at best this would be only a preliminary. The real reform must be based on the training of a sufficiently large number of men in the principles of public health so that a body of educated, expert opinion in the medical profession will appreciate what can be done and what ought to be done, and will stand solidly back of attempts to introduce public health measures and to strengthen public health organization. Thus far, as everybody knows, little has been done to expand the work in preventive medicine in many of our leading medical schools to a degree at all commensurate with its importance in the future of American medicine.

The situation is simply this: Civilized peoples are spending vast sums in the work of palliating and remedying the results of disease, and relatively little in preventing disease. Reconstruction of ravaged territory is sometimes necessary; but a world with eyes fixed on a peace congress does not need to be told that our main concern is to choke off the agencies of devastation before they become operative. The responsibility of laying much more stress than heretofore on the prevention of disease rests primarily on the medical profession. There are at least two ways in which the conspicuousness into which the war has thrown this side of medicine can be immediately utilized in furthering the interests of public health: One is the support of public health authorities by individual physicians. The other is the frank, efficient and immediate recognition of the importance of preventive medicine in the curriculums of our medical schools. —*Jour. A. M. A.*, Jan. 25, 1919.

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EDITORIAL

RACE BETTERMENT.

Dr. Kellogg in a recent address on this subject, truly says: The world needs a new aristocracy; not an artificial blue-blooded one created by wealth or official authority, but a real aristocracy made up strictly of Apollos and Venuses and their fortunate progeny. Instead of this we are actually building up an aristocracy containing a large percent of lunatics, idiots, paupers and criminals. These unfit persons already have reached the proportions of a vast multitude: 500,000 lunaties, 80,000 criminals, 100,000 paupers, 90,000 epileptics, and we are supporting these defectives in idleness like real aristocrats in our asylums and similar institutions and by private charity, at an expense of one hundred million dollars a year, and this mighty host of mental and moral cripples is increasingly due to unrestricted marriage and other degenerative influences at a much more rapid rate than the sounder part of the population so that they are likely in time to constitute the majority unless some check is put upon the increase.

In contrast with this, the carefully prepared lists of twenty-seven of the greatest names which history records, reveals the fact that ten, or more than one-third, of these master minds came from one small city not nearly so large as Louisville, and in less than a century Athens produced more men of surpassing intelligence and genius than were developed in all the rest of the world besides during a period of two thousand years.

No material progress can be made toward the suppression of the causes which at the present time are, almost unopposed, working with increasing activity for the deterioration of the race, until we divest ourselves of a lot of unwholesome sentiment in relation to personal liberty.

Modern scientific discovery has made possible the development of a civilization, the glory of which might far outshine that of the ancient Greeks, which from lack of knowledge which we possess, was destroyed by that ancient enemy of human progress, the malarial mosquito.

Within recent years, such rapid progress has been made in so-called public sanitation, that the field seems, to the superficial observer, to be almost worked out. There is, at least, every prospect that in the not remote future, typhoid fever, yellow fever, cholera, malaria and other infections which may be controlled by the organized application of scientific knowledge, will have been practically wiped out. In attempting to call attention to some of the things which may be done to stop race degeneracy and to prevent the development of insanity and other nervous disorders, we will endeavor to point out some of the preventive measures which at present, if in operation at all, are employed only in a partial and desultory way, and which, it seems, ought to be put into efficient operation as speedily as possible.

1. There should be made in every community under official supervision, a thoroughgoing health survey at least every five years. At the present time, real health civilization in the United States is so little advanced that the rather crude system of registration of births and deaths in vogue, although almost complete in Kentucky, reaches only a little more than one-half of the population of the entire country. In this survey, notes should be made of all particulars relating to water supply, milk supply and other public matters which might influence health, but especially with reference to the existence of degenerative disorders and chronic infections, essentially insanity, epilepsy, feeble-mindedness, cancer, goitre, tuberculosis and syphilis. Whatever obstacles may present themselves at the start, will rapidly disappear as the public become enlightened in relation to the objects sought by the survey, and the advan-

tages which individuals, as well as communities, may gain therefrom.

2. In connection with the interests of health, there should be provided at convenient points dispensaries at which any citizen may have the benefit of an expert medical examination, whether able to pay for the same or not. These dispensaries should be provided with every facility for the most up-to-date bacteriological and chemical laboratories and an efficient X-ray outfit. The expense of equipping and maintaining these free medical dispensaries would be covered many times over by the saving of human lives. The lowering of the death-rate so little as two per thousand would mean an annual saving of two thousand lives in every million inhabitants or two hundred thousand in the whole United States.

3. Regular systematic health inspection of schools, school buildings, and school children should be made one of the conditions under which public funds should be granted for educational purposes. In places where this work has been conducted, it has been clearly demonstrated that fifty to seventy-five per cent in practically all communities are in need of medical attention. To neglect this duty to the child is scarcely less than a crime. Health inspection of schools ought to go much further than the cursory examinations which are ordinarily made. The person charged with the making of such examinations should be experts who have been specially trained for the work, and should be qualified to note the effect of the methods of instruction and discipline employed by teachers. Multitudes of children are made neurasthenic by wrong methods in education, especially by the neglect of physical training and development, and by improper discipline in the school or in the home.

4. The state should organize and carry on continually a thorough-going system of health education. Too large a proportion of attention at the present time is given to the mere facts of physiology and anatomy, without reference to their practical application. Children require training even more than instruction in health habits. They should be taught and trained in the proper mastication of food. Teachers should become intimately acquainted with the dietetic habits of children under their care. Of the very highest importance is instruction and care of children in regard to bowel action. We are only just beginning to appreciate the enormous influence upon health, of intestinal stasis and of the toxins formed by pernicious forms of intestinal flora. It is more important for the individual child that the teacher should know that his bowels move properly two or three times a day, than that he should obtain high standing because of his knowledge of the three R's. The educational campaign should not stop with the school but should be carried into the homes. Parents' schools and especially mothers' schools are needed at the present time quite as much as schools for children. Health missionaries are needed in every civilized community. An educational campaign to be effective must not stop with the cities and towns, but must give special attention to rural districts, in which at the present time the conditions of hygienic life are so much neglected that in certain well regulated cities, where advanced hygienic knowledge has been applied, the death rate has actually been reduced below the average rural death-rate, notwithstanding the evident advantges naturally offered by rural life.

5. That portion of the twenty million school children which is now herded for nine months of the year in dusty, poorly-ventilated, poorly lighted school rooms, compelled to sit upon seats which deform their bodies, and restrained from responding to the natural instincts which call for almost constant activity in the young, should be turned out doors and taught in fresh air schools, and thus be given as good an opportunity for the preservation of their health, and the development of resistance against disease, as we are now beginning to give to tuberculous children and those who show marked evidence of sub-nutrition. If diseased children profit by these outdoor opportunities, healthy children would profit still more. School boards will supply play grounds, swimming pools, open air school rooms and other fresh air opportunities, just as soon as the people become sufficiently intelligent to demand this protection for their children. Fresh air school rooms, play grounds, and outdoor life in general, are as potent means of combating nervous disorders in the young and the old as in the prevention and cure of tuberculosis.

6. The sale and use of habit-forming drugs of every description must be controlled by law. The relation of alcohol to nervous disorders and the necessity for a vigorous and determined effort to suppress the evils arising from the use of this drug are now universally recognized by the intelligent and sober-minded people of the country; but less consideration has been given to the still wider use and spread of the questionable habit of tobacco using in its various forms, especially in early life. Multitudes of boys become nervous wrecks before they reach the high school through the use of the cigarette, and still greater multitudes of boys and professional men are victims of chronic functional and nervous disorders as a result of the excessive

use of the cigar and pipe. Tea and coffee and their congeners, the various so-called cola preparations, which are purveyed at soda fountains, exercise a baneful influence which reveals itself in the aggravation of nearly all forms of functional neurosis, and help to swell the burden of nerve-destroying toxins which the average citizen is carrying to his enormous detriment.

7. The hospitals for the treatment of the insane should receive such financial support that it would be possible to make them in every respect models of therapeutic endeavor. They should be equipped with every facility known to medical science for improving the physical condition of their inmates, thus becoming object lessons to the profession of the highest efficiency in the practical application of modern medical art and science. Dawson estimates that the body of degenerates, and potentially degenerate person in our population at the present time, constitutes not less that ten per cent of the total, and careful statistical calculations indicate that the proportion of this class of defectives is increasing at the rate of not less than five per cent. every decade, and this great horde of insane, feeble-minded, epileptic, criminal, and borderliners are, except when temporarily confined, left to propagate their kind almost without hindrance. It is certainly the duty of the state to institute measures which will effectually control this stream of unfit persons at the fountain head. Thus far only two remedies have been offered,—segregation and sterilization. It appears very unlikely that sterilization will never be used to an extent sufficient to accomplish tangible results. Segregation appears to be the only solution of the problem in relation to those who are so unfit that restrictions of their liberty is manifest and necessary for the common good. Such persons now confined in institutions constitute nearly one per cent of the total population, or about one million persons. Unfortunately, however, the average period of restraint exercised by segregation is only about five years which is not sufficient for the exercise of any definite influence for lessening the increase in these undesirables; but much more should be done than is being done in this direction.

8. Intelligently and conservatively improved marriage laws may possibly accomplish even more than segregation or sterilization. The facility with which the unfit and the potentially unfit are now able to obtain marriage license, and the greater fecundity of this defective class, as compared with the healthy families, which has been demonstrated by Tredgold and others is a menace to society and to the race, not only through the propagation of brain and nerve defects, but through the transmission of a greater number of other tendencies and blemishes. The interests of the race and of society must be protected by proper regulation of the marriage institution.

9. The tax lists in which is recorded the name of every holder of real or personal property, or who pass a head tax and the estimated value of the same is essential for the collection of taxes, the chief source of revenue of the state, is guarded with jealous care, and the accuracy of its records is verified by painstaking inquiries. We seem to have overlooked the fact that taxable property is not the only nor the most valuable of the resources of the state. The actual money value of the average human being, taking the lowest estimate offered by economists, is so great as to give the population of any state a far greater money value than any other of its resources. This fact alone will justify the maintenance of a health registry in which should be recorded the results of the annual health inspection made by a bureau established and maintained at public expense for the purpose. The establishment of such a registry will be one of the most effective means of arousing an interest in health as a personal asset. Such a registry also would be invaluable in connection with the operation of restricted marriage laws. Of course, a great educational work must be done for the general public before such a registry would be appreciated or even tolerated, but as the people become more intelligent in relation to the value of health as a factor in personal efficiency, and a means by which the physical welfare of the individual and of the race may be promoted, a healthy ambition toward bodily perfection will be developed and in time health as an asset will come to be esteemed as more precious than gold.

With the increased intelligence resulting from a systematic, persistent propaganda of this kind the possessor of clean blood, of a sound body free from blemish and taint of disease, will come to feel a just pride in his record, in an erect, vigorous carriage, an elastic step, clear skin, clean breath, power to endure fatigue and resist disease, the ability to appreciate to the fullest the joy of life, and to discharge in the highest manner the duties and obligations of a twentieth century citizen.

THE HEALTH OF OUR ARMY.

Statistics published last week in the "Medical Mobilization and the War" department show that the Medical Department of the Army established an enviable record during the war. The standard by which to measure the work of this department is the effective list, and the record shows that, on an average, 94.3 per cent. of our army were effective for duty; of the remaining 5.7 per cent. only 3.4 per cent. were on the noneffective list because of disease, a record which has no parallel in military annals. The medical corps of an army was put to its hardest test when it followed the army into action. The total number of American soldiers wounded was 195,000, of whom the Medical Corps saved the lives of 182,000; of these there are but few who carry empty sleeves or use artificial legs. And so the figures go: a venereal disease rate lower than that of any of the Allied or enemy forces; typhoid fever practically eliminated, and a rate from even the dread scourge pneumonia that was less than might have been expected under the conditions.

SCIENTIFIC EDITORIALS

MYRINGOTOMY AND THE GENERAL PRACTITIONER.

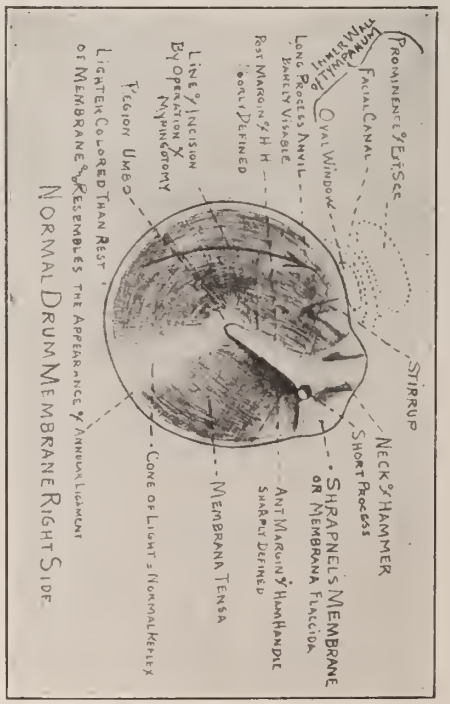
A few days ago a general practitioner asked me to write for the JOURNAL what I had demonstrated to him as to when and how to do a myringotomy and tonsillectomy, emphasizing the statement that there were times when he could not get an otologist and laryngologist, however urgent the case and how much he desired to have one. This is especially true regarding myringotomy in acute otitis media. At his earnest solicitation I shall try to describe in writing, what I told him and demonstrated to him.

For years I have contended in my articles on the mastoid operation, that it was as much the duty of the family doctor, living some distance from an otologist to be able to recognize an acute otitis media and mastoiditis, as it is his duty to recognize an acute appendicitis. More than this, I have endeavored to emphasize the fact that what the appendix is to the abdominal cavity, the mastoid antrum and cells is to the cranial cavity, the point of least resistance when infected and safest to relieve by surgical treatment.

It is better by far to prevent pus formation by several, (if need be) incisions properly made in the drum-membrane than to allow the infected serum to become purulent, and the pain and sepsis to continue, until an opening is made by disintegration of, and pressure against, the membrane. The latter heals with a cicatrix and impaired hearing—the properly made incision (myringotomy) heals either without a cicatrix, or one in which impaired hearing and ankylosis of the ossicles is rarely detected. Not only this, but a properly done myringotomy when indicated, and free drainage established diminishes the danger of mastoid cells infection.

Myringotomy is not an easy and simple operation. Indeed, I know of no surgical operation that can be done as quickly that requires more accurate knowledge of the parts than this. The operation is indicated if there is persistent pain in the ear and the drum membrane is bulging from the pressure of serum or pus in the middle ear cavity.

Before attempting the operation be sure you have refreshed your memory on the anat-



omical topography of the normal drum membrane. A good light, kerosene lamp or electric, is necessary, and several ear specula. Be sure to use a speculum not too large or too small, but one that will enable you, after the external ear is pulled up, out, and back sufficient to straighten the membranous canal, to see every part of the drum; a head mirror properly adjusted to reflect sufficient light to thoroughly illuminate the part; and lastly a sharp myringotomy knife. It is not necessary to emphasize the necessity of thorough

aseptic or antiseptic precautions, this goes without saying.

I place especial emphasis on the difference between a myringotomy and paracentesis—the former is an incision, the latter a puncture.

The illustration used (Fig 1) was made for me by Dr. George McKenzie, and a careful study of it, will enable one to do the operation so as to get the best results. Unless very dextrous the operation is best done under general anaesthesia, but painting the parts with equal parts of phenol, camphor, and glycerine renders the operation almost painless. The incision should be made upward in the posterior inferior quadrant. I quote from Dr. McKenzie's discussion of a recent paper on this subject which I read at Huntington, W. Va.: "The reason the incision is made upward instead of downward is preferred, is because the upper posterior portion of the tympanic membrane is directly continuous with the upupper posterior wall of the canal (which of course is a curved line), which makes the membrane naturally slant considerably, on the average of 45 degrees or more. The upper posterior edge of the membrane, therefore, is much nearer to the operator than the lower anterior edge. In introducing the knife through the membrane to make an incision downward, there is a great liability of the knife point coming out of the tympanic cavity into the external canal with the result that merely a puncture has been made. Furthermore, in making an incision downward the blood and secretion through the middle ear are liable to get into the field and obscure it, all of which is overcome by making an incision from below upward."

After doing the operation, no further treatment is required except placing small pieces of absorbent cotton in the external canal, changing it as often as it becomes moist with the discharge. Irrigation of the canal should rarely be used, and never except under strict surgical precautions, lest a new infection be caused. If the canal becomes filled with thick pus I have it irrigated with a medicine dropper filled with 1-3000 bichloride of mercury in 25% alcohol. If the incision closes and the middle ear fills with fluid, it should be opened as before.

This procedure, though academically described as my friend requested, not only immediately relieves the intolerable pain of earache but I am sure prevents many scarred drums, much impaired hearing and many cases of destructive mastoiditis.

J. A. Stucky,

HOT WEATHER SUGGESTIONS.

With the advent of warm weather it becomes necessary for us to adapt ourselves to the change that has taken place in the atmosphere that surrounds us. The first aim should be the lightening of the clothing worn by the individual. When possible there should be a change to a color that is least absorbent of the sun's rays and this naturally is that color that reflects all colors of the spetrum, viz., white. In women's wear this is extremely commonly adopted and with the low neck and peek-a-boo waist gives a large surface for the reflexion of light from the clothes and radiation of heat from the upper chest and neck. In fact, the summer dress of woman is more in consonance with the season than man's, especially of late years where the short skirt, thin stockings, invisible sleeve or no sleeve at all, furnishes further areas for loss of heat. At the same time, poor man, wrestles within the restrictions of soft or starched shirt and collar with marked retention of heat and added discomfort. Perhaps some day dame fashion and convention will release man from this thraldom and those of us who suffer with the heat and the added discomfort of perspiration, live in the hopes that the navy blouse or a shirt waist of this character will free man's neck from the heat enslaving bands that surround it.

Warmth is the result of the activity of metabolic changes taking place in the organism and the fact that the body temperature is maintained at almost a constant level, despite wide variations, in the surrounding temperature of man's varying environment is due to the fact that he possesses a very efficient regulating mechanism.

Preeminently among the devices by which heat is regulated is that of vaporization of water from the lungs and skin. When the temperature of the surrounding medium rises there must be some arrangement by which the body may get rid of its surplus heat over and above 98.6 (37C) the evaporation that takes place provides for practically the entire loss of heat unless perchance the temperature of the body itself rises. However, we are not considering pathological conditions which demand special attention in their management. DuBois and Soderstrom carried out three hundred experiments in the Sage respiration calorimeter at Bellevue Hospital under standard conditions of climatic environment as represented by temperature between 71.6 and 75.2 F. (22 and 24C) with a relative humidity of from 25 to 50 per cent. the persons being lightly clad. It was found that normal men, lightly clad, gave off approximately one fluid ounce (29 grams) of water

an hour through the vaporization from the skin and respiratory passages. Their studies led them to conclude that under ordinary conditions of health and climate 25 per cent. of the heat produced is lost through the lungs and skin. It therefore behooves us to pay careful attention to these areas in the days when the mercury soars upward. That man contributes in many ways to his suffering from the heated term will stand without question, and it may not be amiss to call attention to the bad psychology that insists upon constantly referring to the state of the weather and how "awfully hot it is." One can constantly repeat this till they can come to believe that it is impossible for them to be comfortable and satisfied in summer. It should be remembered that contentment and its effervescent companion, happiness, oftentimes arises from within and that perhaps the mental attitude of Mark Tapley would go a long ways toward overcoming the psychic misery engendered in one's self and lighten the burden upon the unfortunate people who have to be bored by the infliction of these people's company. The importance of a little stoicism will tend to make the summer more bearable for the man who has to remain at home and work. Oftentimes work is of advantage in lessening the hours in which to cavil, "knock" and "chew the rag."

Granted the hypothesis that we are in the midst of a heated spell of weather, what should we do? This is a question that presents itself and requires consideration from many standpoints. Common sense and willpower are required to carry it out.

The first thing is to dress, sensibly. Do not under any circumstances wear heavy clothes simply because they are in style. Let the external clothing be as light as possible so that radiation and evaporation may more speedily take place. It is to be regretted that convention does not permit men to go upon the street without their coat. Now-a-days we rarely see a man wearing a vest and if the low neck outing shirt and trousers were adapted for street, office and business use it would go a long ways toward making clothing more comfortable. As has been mentioned before the modern raiment of women is better suited for the summer than that of man and with the elimination of the faulty high heeled foot gear would become even more comfortable if less stylish.

It is of importance, not to expose oneself unnecessarily to the rays of the sun. It should be remembered that muscular movement and activity tend to produce heat, a common fact disregarded in summer and utilized in winter by the stamping of feet and the movement of the arms. People do not need very great amounts of exercise during hot weather and this fetish to which so many hold can be lessened and thus overheating avoided. It should be remembered that the shady side of the street is cooler and that darkening the room excludes a good deal of the external heat. It is always an excellent thing never to be in a hurry if one can avoid it. And in summer the picture of the red faced individuals with melted collar mopping his perspiring face and indulging in mild or gross profanity has become classic of the man who rushed.

Heat loss from the body takes place more rapidly when the air is moving than when it is still, hence, the comfort that is derived from the modern use of a fan. If one cannot stand the direct impingment of the breeze upon the body they can at least place the fan so that the air is driven out of the room or a fresh moving current is started thus relieving the oppression of stagnant air. There is another decided advantage in that we do not breathe and re-breathe the same air. In many offices and business houses to-day the fan is a necessity enabling many clerical persons to perform their work without disfiguring the papers and books with moist hands and drops of perspiration. In some instances it also helps to preserve temper and thus conserves energy.

The diet becomes an important factor to the individual who would like to keep as cool as possible. The advice, not to eat too much, should always be in evidence but this is especially true in summer time where all toxemic and heat producing foods should be avoided. This applies with special force to meats, rich gravies, heavy indigestable foods, pies, pastries, dumplings and candy. An excellent diet is that made up of fruits, fruit juices, cereals, dairy products and vegetables. The injunction to masticate thoroughly will very frequently, if carried out, lessen the actual *quantum* of food consumed.

What shall we drink in summer? There is in my mind no question but what the three best liquids are water, milk and butter-milk and the fruit juice drinks. Of the importance of the free drinking of pure water, both in summer and winter, but more so in warm weather, there can be no question that the advice to consume freely of the "cup that cheers, but does not inebriate." To those who tend to choke upon the use of this beverage may be recommended the fruit juice drinks. By this I mean a fruit juice with a little cracked or crushed ice and carbonated water and not ice cream sodas, sundaes, and those of similar composition. Coffee is not to

be generally recommended and especially not in summer. Very weak ice tea with a little lemon makes probably the best table beverage. Arctic explorers have found that weak tea quenches thirst and is by far the best beverage in Polar regions. All iced drinks should not be made too sweet. The ingestion of fluids, either water itself or those largely composed of water serves many purposes. It flushes the entire body, dilutes the excretions, stimulates glandular activity, acts directly upon the intestine and kidney and furnishes ample material to favor perspiration with its subsequent evaporation and heat loss. This also tends to prevent insolation or heat stroke. It might here be remarked parenthetically that the old bug-a-boo of drinking liquids at meals has been exploded for we now know that a reasonable and moderate dilution of the enzyme of the digestive tract really favors digestion. The drinking of hot water, except when specifically prescribed by the physician after a careful test of the stomach contents chemically and their muscular activity by the X-ray must be avoided in both summer and winter. It can be stated emphatically, and we hope without contradiction, that all alcoholic beverages are best let alone in summer, and we might add at any old time. The melancholy days for beer and whiskey used to be limited to the change of seasons from summer to autumn and winter to spring, when it would become "a little too warm for whiskey and a little too cool for beer" but now the melancholy period seems to be dated July 1st, 1919.

Bathing is an absolute necessity if we expect to live under mankind's present conditions. It is not only necessary as a matter of cleanliness, and comfort to oneself but becomes doubly necessary where we mingle with our fellow beings. There are many suggestions made and some schedules worked out as to how one should bathe in summer. The truth of the business is that the matter is an extremely simple one if it is viewed from the rational, common sense and physiological standpoint. A great many people bathe twice daily in summer. Where this is the case the morning bath should consist of first a soap bath with warm water followed by a cold application of moderate (half to two minutes, depending upon the temperature) or a very brief cold application of a few seconds length, both followed by a good rub down with a crash towel. The action of this bath is cleansing and quite stimulating preparing one for the activity and exegencies of the day. To those who only take one bath a day or those who take a second bath at night time should never in hot weather employ a cold bath or even a cool bath before retiring. The average individual has as a rule become fatigued, moderately irritable, somewhat restless and contemplates the warm night with somewhat of a degree of mild apprehension. The bath at this time should be warm, not hot and may where it is the only one employed in the 24 hours be preceded by a soap bath. The individual should remain in this bath for at least ten minutes resting quietly. The action of the heat is to relax, that is to say, lessen muscular activity and hence heat formation to act as a sedative and thus prepare the patient for the night. To those who are robust and who do not "catch cold" easily a very great enhancement of the sedative and cooling properties of the bath may be brought about by only partial drying the skin surface and allowing the night dress to become damp or moderately moist so that when they retire further evaporation will take place and the patient remains cool for a number of hours. It must be borne in mind that evaporation is a cooling process and that it is oftentimes utilized in far eastern countries in the place of ice for cooling water. The water is placed in unglazed earthen vessels and the evaporation upon the exterior cools and renders the water more palatable.

Housewives should exercise care to exclude from their homes in the heat of summer all the light and all the heat possible by keeping the house dark or at least dark except in those portions actively in use for the necessary household activities. It goes without saying that the pest and bane of civilized life, the fly and the mosquito should both be excluded by the use of screens properly adjusted. In this way infection is excluded, sanitation improved and we believe from the esthetic standpoint food is made better and certainly our tempers are not as sorely tested as when we hear the basso of the fly.

These suggestions apply to adults and particularly to the worker and these days that practically means everybody. But what shall we say is the proper thing to do for the baby, especially during the heated term when so many of them pass to the "Great Beyond?"

Babies and very young children belong at home during the day of a heated term. If mothers have to go out and attend to matters it is certainly a bad business to carry the infant through the heat, the dust, and the noise of the streets in the mid-day or afternoon on some shopping tour. It were far better for neighbors to combine and let one another off while one of them remains guardian and caretaker of the tiny mite. And keep the baby in the coolest part of the house, no matter whether that happens to be upstairs or

down. Give the child plenty of cool, not cold, water to drink. The improved health of baby will justify the trouble of giving the little rascal certainly one warm bath a day and sponging with luke warm water two or three times in order to keep him cool and comfortable. The water employed should be about that of the body temperature and should be given always just before feeding, never immediately after. Be sure that the folds, especially those of the groins, have been thoroughly cleansed and sponged. Most mothers follow the bath with talcum powder but in our opinion this should not be done unless there is some irritation or chaffing of the skin and it should be applied only where this irritation exists. Talcum powder is apt to coat the body and mechanically interfere with the activity of the sweat glands.

In conclusion it might be again remarked that all temporal things have a time limit and within time the summer passes away. This being the case we must bring into play patience and philosophy and learn not to prattle or to fuss about the heated term, no matter how fortunate some may be who can leave the heated area and reside during the summer months upon the mountain tops. Remember that it does not make your lot any better or you any happier to rail at them and pity your own misfortune or inability to do likewise. On the contrary a cheerful spirit, a modicum of patience and an endeavor to live right will do much to add to the individual's activity, and efficiency in their work and help them to pass serenely and contentedly from season to season.

CURRAN POPE.

FURTHER OBSERVATIONS IN REGARD TO PSORIASIS.

We think Wintervitz's expression "What Psoriasis is Nobody Knows" still holds good, notwithstanding the fact that several decades have passed since he expressed himself. All the theories lately brought forward as to the causation have failed to reveal the real cause. Schamberg lays stress on the intake of protein as the cause of psoriasis. Pusey, however, lately questions whether the diet has anything to do with psoriasis; quite recently he cited the case of a patient who developed psoriasis in spite of a diet strictly vegetarian for a great many years. This would illustrate at what different conclusions two observers of about equal age and experience may arrive in regard to a disease which is extremely common and which so frequently come under the observation of both.

It would seem that adherents to the theory of diet as the cause of psoriasis do not distinguish between the cases of psoriasis that have begun in early life and those that began after middle life. In cases of psoriasis occurring after middle life in patients with an undoubted gouty tendency, the proper restriction of the nitrogenous diet is certainly indicated, but when we come to include cases of all ages, then we have to protest against such a theory. In our pracice we have seen psoriasis in vegetarians and in butchers, and we have arrived at the conclusion that diet had very little influence over the course of the disease. We believe, however, that anything approaching an excessive use of alcohol had an aggravating effect upon the eruption. This is in line with our observations that in a great many cases there has been a decided nervous element; we should say in at least 75% of our cases. We have also observed that in a very large proportion of cases of psoriasis the eruption began in one or two regions of the body, to which initial areas it was restricted for weeks, months, even years. Then, under circumstances which varied in different cases, the disease began to generalize and became symmetrical and from that time on remained symmetrical. We believe that if these initial lesions were vigorously treated from the beginning we might hope either to cure the disease or greatly reduce the frequency and severity of recurrence. We have practiced long enough to see cases of a very diffuse and generalized character gradually improve under steady and persistent treatment, sometimes medicinal and sometimes local, until finally the disease was reduced to very trivial proportions, and, so to speak, driven into a corner. In some of our psoriatic patients who remained faithful and whom we called our "regular annuals," the disease had been practically worn out. We hardly think that the disease is microbic, though some very prominent investigators believe that psoriasis was microbic in the beginning and that it gets into circulation with periods of dormancy and activity. We do, however, regard it as a self-multiplying disease, and believe that during every attack persevering treatment should be continued until every lesion is gone. When we get hold of a gouty patient with psoriasis we regulate the diet accordingly. The same is true of dyspeptic patients, but as for the effect of diet, in itself, upon psoriasis, we do not regard it as an important factor in the etiology of the disease.

M. L. RWITCH and S. A. STEINBERG.

ORIGINAL ARTICLES

THE RELAXATION OF THE THYROID TO CONFUSIONAL INSANITY AND MELANCHOLIA.*

By J. Spencer Wright, Louisville.

That the thyroid and ovaries are responsible for many cases of insanity of the melancholic and confusional types, is generally conceded by all writers on the subject; but none seem to have made the relations as clear as we would like to have them. That there is a very close relation between the thyroid and the ovaries is also the consensus of opinion. Some observers have gone so far as to call the thyroid a "sex gland," and its relation to many forms of psychosis is mentioned by most writers. (The same might be said of any of the glands of internal secretion). However, in this paper my remarks will be confined largely to the thyroid and its relation to the various types of mental disease.

Quoting Blair Bell: "Men's reproductive calls on metabolism are not greater unless excessive sexual intercourse is indulged in, and this is the reason for men not having the same disturbances as women." Hence, the periodic fluctuations in woman's economy are provided for by the capability of her endocrine organs—the "regulators of metabolism"—as Paton aptly called them.

Quoting Bell again: "The instability of metabolism, actual or latent, which is seen in women is actually the causal factor in the frequency with which they suffer from disorders of the endocrine organs mostly concerned—the thyroid and ovaries." It might be said here that the pituitary, suprarenal cortex and pineal body, being calcium retention glands, are recessive in the nonpregnant but active in the pregnant female, as large quantities of calcium are required by the fetus. Therefore, there is a pronounced as well as a sudden change in the functions of the various glands, mostly the thyroid and ovaries, at parturition, which is responsible for puerperal insanity and many different forms of psychoneuroses so common among women dating from their first childbirth and becoming worse at each delivery. Such non-functionating glands are likely to also produce adiposity. However, if the calcium retention glands are active in the non-pregnant female she will develop masculinity, which is commonly noted; on the other hand, if the same glands are not active in the male feminity results, which is also a common occurrence.

After the menopause (as before puberty) the mental attitude reverts to a neutral type, and it is during and after this great change in the endocrine organs (the thyroid and ovaries heading the list) that we see mostly the maniac depressive insanities, with hyperthyroidism and non-functionating ovaries. It is my belief that if treatment be instituted early much can be done toward preventing if not curing these most dreadful conditions.

Mott emphasizes the importance of hyperthyroidism in relation to insanity, and also says the ovaries are often found atrophic in these cases. Whereas, Blair Bell observes: "I think that when ovarian insufficiency gives rise to mental disturbances, there has previously been normal activity in these organs." He also says he treats these patients with thyroid alone or combined with ovarian extract. Ovarian extract alone is useless. I have used this combination with good results in quite a few cases according to Bell's theory, especially patients past the menopause who had mild psychoses, such as irritability, anxiety, etc., with thyroid adiposity. I have in mind a patient of fifty-five who was extremely irritable. Thyroid and ovarian extracts were administered for three months during which time she lost twenty-five pounds and improved much mentally.

The combination mentioned is also an excellent prescription for cases so commonly seen among school girls, nurses, or any class of girls or young women who have recently changed their domestic life and mode of living, especially if they have taxed their mental faculties more than ordinarily, which has a tendency to induce hyperthyroidism and ovarian insufficiency. Adiposity is often present, with or without psychosis, or there may be only a mild depression or some eccentricity noticed by associates, either with or without amenorrhea. However, the latter may be the first to attract attention. If the condition has existed for some time, upon examination enlargement of the thyroid may or may not be found. Occasionally the reverse is true and these individuals develop acute mania, catatonia, or any of the acute violent psychoses caused by toxins produced by acute hyperthyroidism.

In speaking of the thyroid we must keep constantly in mind the sex glands, for the beginning of ovarian insufficiency means the beginning of disfuctionating thyroids. When the thyroid secretion is so great as to produce toxic psychosis, also in the lesser forms of toxemia, there are marked neurologic symptoms.

*Read before the Jefferson County Medical Society.

It is a fact, however, that in many cases of enlarged thyroids the symptoms are of hypothyroidism, and in such cases thyroid extract is indicated. In hyperthyroidism the ovaries are at fault or may be normal. It is in this class of cases that we find melancholia or depression only, and much can be done for the patient along the lines of organotherapy. On the other hand, endemic goiters simulating exophthalmic (or hyperthyroidism) are not infrequently encountered, and it is in this class that we see the mixed type of confusional and maniac depressive insanities. I think many, if not all, of the insanities associated with puberty, adolescence and the menopause, owe their etiology to toxemia from over-stimulation of some of the endocrine glands.

As to heredity: In my opinion there may not be primarily any such thing as hereditary insanity, but we do inherit similarly acting glands of internal secretion as our ancestors, and if theirs were not in harmony or in like manner are deranged, the insanity itself being only a symptom of the brain center involved, and a physical examination should enable us to determine the gland or glands at fault.

Now, if we think for a moment, we know that we have symptoms simulating maniac depressive, dementia praecox, confusional—in fact all forms of psychosis—caused from toxins following or resulting from influenza, typhoid fever, pneumonia, scarlet fever, puerperal sepsis, infectious teeth; also from certain drugs, such as alcohol and opium; the type of psychosis here also depending upon the brain center involved. This class of patients as a rule get well because the production of toxins ceases. Then, why do not the "true psychoses" so to speak, get well? Or, why do some of them get well? Because the overworked gland is relieved by some other gland, or the overworked gland has undergone degeneration, and in either case ceases to produce toxins and the patient gets well; and, *vice versa*, they do not get well. In some cases we get the same results as in toxemia from infections fevers, etc. So toxemia may be the cause of all the insanities. The same might be said of psychoneuroses, as I have never seen a case of hysteria with a normal endocrine system. Toxemia will in like manner cause neuralgias, such as sciatica, facial, intercostal, migratory, arthralgia, etc.

While I believe deranged glands of internal secretion are responsible for mental defectiveness, I also think the proper arrangement of same is correspondingly responsible for intelligence; that is, the nearer the glands are in harmony with one another the less hypersecretion. I mean by this that there is a certain amount of secretion necessary, and if one gland fails to do its part some of the others assume the work. It is this derangement I have referred to as being hereditary and responsible for mental defectiveness (or feeblemindedness), insanity, etc., i.e., certain centers in the brain are recessive because the glands controlling them are in like manner recessive.

It might be said the line between the sane and the insane is very indistinct, as it depends on the degree of harmony of the glands of interal secretion. It seems to me everything, even life itself, depends on the secretions of these glands, that it to the stimulation produced by these hormones do we owe our existence.

It is not practical to give extracts indiscriminately to mental defectives and those with chronic insanities, especially of the involutional type where the thyroid and ovaries are to blame. I believe, however, the time will come when there will be a serum for each gland in the chain, and we will be able to detect the one at fault and treat it in such manner as to preserve harmony, and in that way prolong the usefulness of man just as a piano is kept in harmony by adjusting the string at fault.

Some authorities claim that a hypothyroid means a hypo-ovary, but it seems to me the thyroid begins overwork at the time the ovaries begin to atrophy or hypo-functionate. I think the enlargement of the thyroid (except cystic) is an attempt of nature to compensate for ovarian deficiency. Finally, the thyroid undergoes degeneration and stops functionating as have the ovaries preceding it. It is during the stage between the beginning of ovarian atrophy (beginning menopause) and degeneration of the thyroid (beginning senility) that most of the involutional psychoses appear.

Now, as I have already stated, it is sometimes difficult to differentiate between a hypo- and a hyper-functionating thyroid or draw a line of demarcation between them. I have used the following procedure which I think is a very good one, viz., administer thyroid extract (with caution) and watch results. If the extract is given to a patient with a hyperfunctionating thyroid, it causes increased hyperthyroidism or toxicosis; but if there is a hypo-functionating thyroid, the result is beneficial. Clinically, in hypothyroidism signs of more or less myxedema appear as soon as the thyroid loses its activity, which may be at any age between puberty and senility. If this is not clear enough to make the

diagnosis, I would advise that the extract administration be tried.

There is no evidence of endocrine disturbance in simple goiter, and an enlarged gland does not necessarily result in hyperthyroidism when the ovaries are not at fault. However, as a simple goiter may develop into Graves' disease we will not consider this class of goiters. It might be said that the thyroid preparations as routine treatment in simple goiters are not recommeded.

While likely to occur at any age beyond puberty, the most opportune time for development of thyroid psychosis is during or after the menopause, with the exceptions already noted, as the thyroid and sex glands undergo a great change at that period in both male and female. In fact, I believe men, the same as women, have a menopause similar in glandular changes except the metabolic disturbances are not so great in the former unless they have indulged in excessive sexual intercourse or led an intemperate life, or both.

The prognosis in thyroid psychosis is very grave. Some patients show improvement for a while and may ultimately recover if the source of infection is removed before the brain center is too greatly damaged, which is likely to occur if the thyroid disturbance alone, or together with other glands is not corrected. It is here that surgery may be of decided advantage. If these patients are not benefitted by treatment, manic depressive or some other type of insanity is likely to develop or, if the case be on of pre-senility, there will be a proneness to melancholia of involution with suicidal tendency.

In regard to treatment: In addition to the therapeutic procedures already mentioned, I have had good results from the administration of thyroidectine (P. D. & Co.'s) where the thyroid extracts did positive harm. Some observers say thymus gland extract has produced benefit by relieving the hyperthyroidism. Others claim to get good results from pituitary extract also by relieving the hypertension of the thyroid.

While most cases of the class mentioned in the foregoing belong to the psychiatrist, many of the milder forms are seen and treated by the general practitioner.

The old saying: "Birds of a feather flock together." In like manner people with similarly acting endocrine systems appeal to one another.

It may be said that a woman's hyper-active thyroid and hypo-active ovaries about the time of the menopause are responsible for her vulgarity of thought, freedom of speech, and carelessness of virtue. At the same time she is sexually frigid and is very likely to suffer more or less adiposity.

I think virtue bears the same relation to sexual passion as the thyroid to the ovary; hence, a woman's virtue is in her thyroid, and her passion in her ovaries.

DISCUSSION:

R. Alexander Bate:. That there is a "relation of the thyroid to confusional insanity and melancholia" is no longer a question. The point in question, then, as the essayist states, is a better and more practical understanding of this relationship.

Confusional insanity and melancholia are the result of disturbed hormone balance. The essayist quotes the consensus of opinion sustaining the belief that the thyroid is a frequent source of endocrine derangement.

How does derangement of the endocrine secretions produce confusional insanity and melancholia? In mental equilibrium, interior senses (those projecting sensations within, such as pain, movement, position, resistance, vestibular, hunger, thirst, sexual and fatigue senses), and exterior senses (those which project sensations in the world, as sight, hearing, taste, smell, pressure, touch, temperature, heat and cold), correctly and harmoniously register sensations. The harmonic action of these functions undoubtedly depends upon an endocrine or hormone balance. Thus the recently much-tested vestibular-sense correctly perceives the rotary oscillation of the chair-test for the aviator. On the other hand, disorientation or the failure to correctly register these sensations is explained by Barker as due to contradictory sensations; that is, one set of impressions conveyed to the brain is contradicted by another set. This inharmonic action we believe is dependent upon altered endocrine activity or lack of hormone balance.

Discordant action on the part of interior or exterior senses results in confusion of thought. The number and character of derangements determine the degree of confusional insanity. The complexity of depressive confusion results in melancholia.

The essayist, literature and experience show these confusions occur after exhaustive diseases, metabolic error, and such toxemias as derange the endocrinous secretions. The mental state in tropical sprue, in which our own pathologists have found only a suppressive of endocrine function, seems another illustration. Perhaps the most unquestioned illustration of the immediate point in question is that of the congenitally deficient thyroid. The cretinous or myxedematous subject remains undeveloped both physically and mentally. Artificial administration of thyroid-principle is followed by normal development both of body and brain records.

Dr. Wright has correctly shown that the very anatomical build and mental type (temperament) are dependent upon endocrine activity, which by heredity is transmitted from parent to progeny.

Whether or not the thyroid be the most active controlling endocrine organ, certainly it is beyond question the most obviously impaired function. Hertoghe says nine-tenths of thyroid deficiency falls on females; hence the statistics of the essayist. Harrower claims minor thyroid insufficiency is as common as orange trees in California. The symptoms of thyroid insufficiency in children are: physical and mental deficiency, constipation, irritation and alimentary deficiency. In adults: adiposities, psychoses, arthropathies, and mental and physical "cold feet."

The thyroid has long been called the "keystone in the endocrine arch." The ovaries as well as all other endocrine glands are more or less interdependent, as expressed by the "arch." Either disturbance or stimulation of one disturbs or stimulates the others. Hormone inequality results; confusional states follow; hence, the rational treatment is the artificial restoration of the hormone balance.

The thyroid, the ovaries, the anterior pituitary glands are supposed to be somewhat supplemental, as shown by the over-development of the anterior pituitary and thyroid during the atrophic changes of the ovaries in pregnancy. Hyper-oophorism and hypo-oophorism are as distinct entities as hyper and hypo-thyroidism. Some consider every confusional state in the female as referable in some degree to these conditions.

Certain hormones activate other hormones. Hormones are conveyed by the blood channels, presumably by the leucocytes and blood plasma. Hence, not only the thyroid, ovarian and pituitary principles are indicated, but those medicaments which tend to "build up" the blood, as spleen, thymus, pancreatic, orchitic and leucocyte extracts are also indicated.

Personally, posterior pituitary principle has seemed to me to obtain the best effect because it unquestionably controls the activity, either increasing or decreasing the function as required of all endocrine glands. For example, it overcomes either amenorrhea or menorrhagia.

The time allotted prohibits discussion of the phases of thyroidal changes. I have previously reported an extreme case of catatonia where life was despaired of, but the patient was entirely restored, mentally and physically, by the use of pituitrin and orchitic substances.

A cretin coming under observation was greatly benefitted mentally and physically by the use of pituitary, pineal and ovarian substances. In the course of the pineal administration which was continued alone, during a three months' absence from observation, exophthalmic goiter developed, which promptly yielded to pituitrin and strophanthus. Hence, it appears pineal secretion may activate thyroid and produce its symptoms of increased oxidation and more "rapid aging" by its effect upon the thyroid. The pineal controls sex development and is especially indicated in the pre-puberty insanities. Thymus, on the other hand, is the adjunct for post-climacteric psychoses.

I am duly convinced correct organotherapy will produce results miraculous in effect. Dr. Wright has given us true tenets and conclusions. Perhaps by opotherapy we are approaching the state to which Job (33-25) refers when he says: "His (old man's) flesh shall be fresher than a child's; he shall return to the days of his youth."

W. E. Gardner: I have long believed thyroid changes played an important part in the production of mania-depressive psychoses as well as some of the confusional types of insanity. Whether in some cases the mental disturbances are due directly to hyper or hypo-activity of the thyroid has been a question in my mind. I do believe however, that a mental and nervous instability is produced which renders the individual more susceptible to other toxic and exhaustive influences.

Enlarged thyroid has been noted most frequently in the maniac depressive type of psychosis, not so often in the confusional types. It has been my experience that confusional insanity usually follows infections fevers, exhaustive diseases, etc. I believe, however, that the melancholic and involution types are oftentimes dependent upon thyroid disturbances. The marked weakness, tremor, anxiety, apprehensiveness with suicidal tendencies, have seemed to depend upon thyroid hyper-secretion.

To determine when thyroid extract should be administered, as Dr. Wright has intimated, is sometimes a difficult proposition. Of course if there are distinct signs of hyperthyroidism, thyroid extract should not be administered. An enlarged thyroid gland does not always mean hyperthyroidism, the gland may have undergone degeneration and thus become hypo-active. On the same basis the Xray plate may show a large sella turcia with a corresponding enlargement of the pituitary gland, yet this gland may be hypoactive because of degenerative changes.

As Dr. Wright has intimated, thyroid extract must be given in doubtful cases experimentally. If under its administration the patient improves, the natural conclusion would be that there exists a hypo-secretion and thyroid extract is indicated. If, on the other hand, the symptoms are aggravated by the administration of thyroid extract, it should be discontinued at once.

Dr. Bate spoke of the use of pituitary sub-

stance in hyperthyroidism and exophthalmic goiter. I have had under observation several cases of exophthalmic goiter associated with hypothyroidism in which marked benefit resulted from the administration of pituitrin, bromides and digitalis. Of course rest, elimination, and nutrition must never be overlooked in these cases. An essential factor is to reduce waste to the minimum and raise repair to the maximum.

With a clearer understanding of the endocrine organs, and their relation to the various mental and nervous disturbances, I believe much good may be accomplished along the line of therapy in many of the psychoses.

J. S. Wright, (closing): There is very little to say in conclusion, as the subject has been thoroughly gone over. Dr. Bate has discussed it in a careful manner, which has been interesting, indeed. While I handed Dr. Gardner a copy of the paper, yet I had no idea what he was going to say. However, his remarks were very much in line. It is true, as the doctor says, many cases of thyroid toxicosis develop maniac depressive insanity, but I think these cases of maniac depressive, as a rule, are past the menopause, while the younger, or more acute cases, are of confusional and mixed types of insanity.

THE U. S. PUBLIC HEALTH SERVICE AND INFLUENZA.*

John McMullen, Surgeon U. S. Public Health Service.

The recent epidemic of influenza was world wide in character, and has been responsible for more deaths than any other epidemic of contagious disease in the past. Epidemics of influenza have appeared in this country since the seventeenth century, the first having been brought here from Spain, which probably accounts for the name "Spanish Influenza," though apparently this recent epidemic was not directly of Spanish origin.

The present epidemic raged in Europe in May, June and July of the past year and soon appeared in this country. Its spread was extremely rapid, but as has been pointed out by a well known observer, never faster than the travel of man. It found us wholly unprepared to meet the general and sudden outbreak, the majority of our medical forces and nursing staffs were of course engaged in war service, and it was therefore impossible to secure a sufficient number of doctors or nurses to even act in an advisory capacity in the stricken communities. Medical assistance in practically all parts of the country was at its lowest ebb by reason of the requirements of the war, and many communities were really in lack of sufficient doctors for ordinary or normal times. The influenza epidemic therefore occurred just at a time when we were least prepared to combat it.

For about a year a bill to create a Reserve Corps for the Public Health Service was before Congress, but this had never become a law. This Reserve Corps was intended for exactly the situation which arose in this recent epidemic of influenza, and it was most unfortunate that it was not in operation at that time. The seriousness of the situation resulting from a shortage of professional assistants as well as trained sanitary corps was apparently recognized by Congress, and a Reserve Corps bill became a law by a joint resolution, and one million dollars made available for the use of the Public Health Service.

A Public Health Service Officer was appointed in charge of the Federal work in each state to cooperate with the State Board of Health and the Red Cross Representatives. Physicians were employed, paid by the Public Health Service and assigned to various parts of each state to work in cooperation with the State Health Officers. The Red Cross was depended upon to a very great extent to furnish the nurses. Their salaries were guaranteed though it was thought that the various committees in which they served should reimburse them and this was generally done. The shortage of doctors and nurses made it absolutely impossible for those employed in combating this dreadful disease to do ordinary practice of medicine.

The physicians were assigned to the various communities in a supervisory capacity, likewise the nurse or nurses accompanying them. They, of course, treated cases when possible, and in many instances, particularly in the isolated districts, this was done to a very great extent. The idea was to have the doctors so assigned as to assume charge with the local health officers and authorities of relief measures. The counties were divided into sections, and volunteers of home talent instructed as to what should be done for the care of the sick and for the prevention of the further spread of this disease.

It was realized that influenza was spread from person to person. Anyone coughing or sneezing was believed to be in danger to his neighbor and was urged not to come in contact with the community for the safety of others, to remain in his or her own room for the safety of the family, and to remain in bed for the safety of himself. The coughing and sneezing acted as a sort of barrage for those within several feet of the influenza subject.

*Read before the Eighth Annual State Conference of County and City Health Officers, Louisville, May 12-15, 1919.

To carry out the idea of excluding as soon as possible the person or persons with colds or possibly influenza, it was agreed to close all schools, churches, and in fact all places where the public congregated in any numbers. This included also the picture shows, political meetings and practically everything of this nature. It was urged that particularly those coming in contact with influenza patients as doctors, nurses, and helpers wear masks made of several thicknesses of gauze, and so attached to the face that all inspiration and expiration would pass through the meshes of this gauze. A quantity of these were furnished by the local chapters of the Red Cross and workers in general, but unfortunately they were not as generally used as should have been, as it was thought they would have prevented a number of cases.

In the state of Kentucky where the writer assigned the doctors and nurses, appeals came from practically all portions of the State, but the ravages of the epidemic were mostly felt in the eastern sections, and in those isolated and rural districts where the people live considerable distances apart, and the most ordinary kind of assistance was wanting. Most pathetic appeals came from many sections and assistants were sent whenever and wherever possible. The shortage of doctors and nurses, however, was such that it was realized it would be impossible to reach them with such help as was then available.

It was finally arranged by an appeal to the President to apply to Camp Taylor at Louisville for the detail of squads of enlisted men, hospital corps men preferably, to be sent in charge of a sergeant to the county seats of counties where the rural districts were in need, and from there to be detailed by a local committee to the districts thought to be most advisable. These counties were informed that in order to obtain this relief the County Judge should request it through the Governor of the State.

When it was found that the scarcity of assistants was of such a serious character, about one hundred Catholic Sisters from the various institutions volunteered their services for duty wherever needed, and more than eighty of these good women were assigned to the eastern part of the state of Kentucky, and rendered most valuable and conscientious service. They asked, expected and received no pay. A number of them contracted the disease, and one died of pneumonia following influenza.

Fortunately the crest of the epidemic was at various sections of the country at different times, and it was therefore possible to utilize doctors and nurses from one state in others when they could be spared from their homes. In this way great assistance was obtained.

The epidemic became nation wide in four or five weeks after it appeared in an epidemic stage in the first localities affected. It appears the first area to be affected was the eastern part of the north Atlantic coast prior to the middle of September, 1918. In some of these localities the disease reached an epidemic stage about September 1st. The latter part of September it appears to have reached this stage in a considerable area along the Atlantic coast. By the middle of October it had attained epidemic proportions in practically all areas. An early estimate of the death rate computed from something over twenty million population, after weighing areas according to geographic location, appears to be about four per thousand of population. An estimate which was made during the epidemic, which would appear to be conservative for the country as a whole, was between 3 and 3.5 per thousand.

The epidemic appeared to be of a more "explosive" type in the small cities than in larger ones, however, in Philadelphia, the epidemic was of a type in common with many smaller cities.

The partial result of certain field studies undertaken in Baltimore show the incidence of the disease according to age among the population of a number of blocks selected at random. Among a population of about seventeen thousand it was found that the case incidence rate was nearly two hundred and fifty per thousand and the mortality rate 4.4 per thousand. It is indicated that about one in every four persons was attacked by the disease and that of each one hundred persons attacked, nearly two died. The disease was quite prevalent among persons under forty-five years of age, the incidence declining sharply in the older ages. The case fatality rate on the other hand was highest among children under five years of age, and among adults twenty to thirty-four and sixty-five and over.

One of the notable things is that there was a definite tendency for the disease to become milder as the epidemic spread. A conservative rate of the total mortality of the United States toward the close of the epidemic was between 300,000 and 350,000 deaths. This would, of course, be added to by reason of the occurrences of recrudescences that have taken place from time to time since the crest of the epidemic.

The death rate was of course very materially effected by the administration of the vaccine. The Kentucky State Board of Health administered thousands of doses of the Rose-

now serum, especially among school children. It is unfortunate that no specific remedy has so far been discovered for influenza. It is well that our patients and their friends realize this and that alleged cures and remedies recommended by nostrum vendors and others may do more harm than good. As might have been expected many "sure cures" for influenza have been sent to the Surgeon General and other officials. They are practically all "specific remedies"; come under various names such as "Isotonic sea water," "Ozone therapy," and "harmonic vibrations," etc. One of the writers who is well known to the New York Health Authorities, addressed the Surgeon General from his state residence, the State Hospital for the Insane. Still another who is probably as honest and conscientious as most of them reminds the Surgeon General of the $1,000,000 Congress has appropriated, and offers to sell his secret for a "reasonable sum." This list of remedies varies from sprinkling a little sulphur in the shoes every morning to tying asafoetida about the neck.

In conclusion we must remember that the chief reliance in combating influenza must be fresh air, nutritions food, plenty of water, cheerful surroundings, and good nursing. It can be safely stated, I believe, that upon the return of influenza, or rather the occurrence of another epidemic, we will be in a better position to fight it, the Reserve Corps which has now been created by Congress will be rapidly developed and ready for use in any emergency. Although this epidemic occurred at a time when but few doctors and nurses were obtainable, it is believed that under the circumstances all possible was done with the thorough cooperation between the Pubic Health Service, the untiring efforts of the State Boards of Health, and the Red Cross.

Course of Typhoid in the Vaccinated.—Pezzi reports that at Milan during 1917 the mortality among hundreds of soldiers with the typhoid bacilli found in the blood was 23.4 per cent. among those who had been given antityphoid vaccination while in the unvaccinated it was 27.8 per cent. In 1918 the corresponding figures were 18.5 and 14.7 per cent. The death rate was thus slightly higher in the vaccinated over the two years. In one group 124 vaccinated, 10 per cent. had relapsed and only 2 per cent. in 104 nonvaccinnated. The total mortality in the 438 cases of typhoid or paratyphoid or both together was 18 per cent. in the unvaccinatedffi 10.8 in the vaccinated. In the larger sense of typhoid plus paratyphoid, the mortality was reduced by the vaccination.

RED CROSS AND INFLUENZA.*

By Lida Hafford, Louisville,

American Red Cross Executive Secretary for for Kentucky.

Early in August the influenza swept over the New England States, leaving death and sorrow in its path everywhere.

Realizing that it was an emergency which would require the assistance of trained workers and large resources to combat, the American Red Cross, as in many instances in the past, stepped in to help save the situation. Because of its past training and experience, and by virtue of its being a National and International Organization, equipped to handle the situation as few other agencies were, its services were gratefully received.

A Committee on Influenza was appointed by the National Red Cross which met with the Surgeon General and mapped out plans of procedure. A similar Committee was appointed in each of the thirteen divisions of the Red Cross. In turn each division called together the Red Cross Director of each State in its jurisdiction, the President of the Board of Health, the Surgeon of the Public Health Service, and the Chairman of the Council of Defense.

On October 22nd, Mr. R. C. Ballard Thurston, Dr. J. N. McCormack, Major L. D. Fricks, and Mr. Edward W. Hines, representatives of the above mentioned organizations in Kentucky, were called to Cleveland to meet with similar representatives from Indiana and Ohio and discuss ways and means of handling the influenza, which was spreading rapidly over our Division. They were appointed the Committee on Influenza in Kentucky, with Mr. Thurston as Chairman. Throughout the period of the epidemic these four organizations worked together in perfect accord and helpfulness.

The plan of organization as mapped out at Washington was as follows:

Each Chapter (and in Kentucky we have one hundred and forty-six, one or more in each county) was asked to form a local Chapter Committee on Influenza, to consist of the chairman of the Committee on Nursing Activities, Chairman of Home Service Committee, and as many additional members as might be desirable. Similar committees were to be appointed in the Branches, thus perfecting the organization down to the smallest communities. This Committee was to be appointed at once, even though the disease was not

*Read before the Eighth Annual State Conference or School of County and City Health Officers, Louisville, May 12-15, 1919.

prevalent, as a means of preparedness for possible local needs and in order to help other communities.

The following instructions were given to this Committee:

1. To make a survey of available nursing personnel within its own community, and to make similar survey of available hospital supplies.

2. To report to the Division Director the names and addresses of registered nurses in the community available for service in the epidemic, and to distribute enrollment blanks to those not already enrolled as Red Cross nurses.

3. To report to the local Health Officer exactly what supplies and nursing personnel the Chapter could furnish upon his request at the Chapter's expense, such expense being a proper charge against the Chapter's share of the War Fund. To spend every cent in the Treasury, if necessary, to relieve the situation, the Division Office when necessary, to pay the salary and expense of nurse.

You will notice that the instructions were to organize and to report to the local Health Officer that the Chapter was ready to assist if needed. It is the policy of the Red Cross always to render such assistance as can not be given by any other local organization, and to withdraw as soon as its services can be dispensed with. To initiate, to promote, to strengthen, to help others to help themselves —that is the purpose of the Red Cross.

These were the plans as outlined by the National Organization to be carried out as far as possible. However, if for any reason they were not found feasible, the red tape was cut and the local problem solved according to the judgment of the Chapter officials.

As I have said before, the four State Organizations in Kentucky worked hand in hand, the Executives holding a conference in the Council of Defense rooms each morning for weeks. The United States Public Health Service divided the State into two sections, Major McMullen, who had been assigned to the State for some months in maintaining Trachoma clinics, being assigned to the Eastern District with headquarters at Lexington, and Major Fricks in charge of the Western section at Louisville.

They assigned twenty-five doctors to counties requesting same, guaranteeing all expenses, and to Major McMullen's office nurses reported from our office before going to counties in the Eastern part of the State.

The State Board of Health did a great service in sending out inspectors to encourage and assist communities in organizing, but perhaps its greatest service was in securing and sending out free of charge the Mayo serum. The Council of Defense co-operated and assisted at every turn, keeping in touch with the situation through its own County Organizations.

Did time permit it would be of interest to tell how promptly the Red Cross Chapters of Kentucky fell in with the plans as outlined by Washington, forming their committees, organizing their forces, establishing emergency hospitals, operating diet kitchens, supplying nurses, registered, practical and volunteer, providing clothing, bedding, medicines, and keeping the State Headquarters at Louisville informed as to the existing conditions.

1000 Columbia Building was a busy place. The long distance phones rang constantly, often three at once, calling for nurses, supplies, and financial aid, the staff being on duty night and day to meet the requests. Thirty-one graduate nurses, forty-eight practical and eighty-two Catholic Sisters, many of whom were graduate nurses, were placed in the State through our office, all of them being assigned and re-assigned. The calls for Louisville were taken care of by the Local Committee and the District Nurses Association. Attention should be called to the fact that the nurses who were sent out into the State served either in the emergency hospitals, or as community nurses, having charge of from seven to one hundred and fifty cases. The Red Cross established forty-six emergency hospitals with a capacity of 2056, treating 4500 cases. In general the Red Cross supported all emergency hospitals.

Mention should be made here of the splendid assistance given at Camp Taylor by the Red Cross Chapters of the State, who, in response to a call from the field director for bed linen, donated thousands of sheets and pillow cases and sent constantly delicacies of all kinds, such as chickens, eggs, butter, etc. The Louisville Surgical Dressing Department made in two weeks' time 96,000 face masks for the Camp. A diet kitchen was established at the Girls' High School and large quantities of food were prepared and sent by machines to the Camp.

A questionnaire was sent to each Chapter at the end of February asking for a detailed account of the influenza situation in the county, and from it and the reports of nurses sent from our office, the following facts concerning the history of the influenza were tabulated:

Evidence of the influenza in Kentucky was first noticed the latter part of September, about the 27th, in Bowling Green. It was brought into Warren county by troops coming through from Texas over the L. & N. rail-

road. The troops stopped at Bowling Green for a few hours and it was noticed that many of the soldiers were afflicted with the disease. These soldiers reported next to Camp Taylor and Camp Knox and the epidemic broke out there in all its fury almost immediately.

The State has been swept by four waves. The first wave covered the central-western and Bowling Green sections. The disease was most prevalent among the ages of 18 to 35. The effects of the first wave were more serious during the period of October 10th to November 20th, 1918. Compared with the following waves, the first was most fatal and more deaths occurred in a shorter period of time than in the three following waves.

From November 5th to December 24th a second wave covered nearly the entire Eastern portion of the State and scattered somewhat over the Central section, afflicting people of all ages. The mortality rate per hundred cases was much lighter than that of the first wave, especially among the miners of Eastern Kentucky.

The third wave was scattered over the State. The death rate was very high among children of school ages, especially among the rural population.

The fourth wave was severe in eight counties raging over the period from February 2nd through the month of March.

In almost all of these reports tribute was paid to the unselfish self-sacrificing, noble work of the doctors and nurses, many of whom worked twenty-four hours a day for days. Many of them also mentioned the splendid cooperation of the local health officers.

Two other features should be mentioned in this connection, as they appeared in the nature of a follow-up. One was the distribution of 100,000 bulletins giving instructions as to best methods of treating the influenza before the doctor arrived, or in the event a physician could not be secured, and the means of preventing its spread. They were prepared by the Red Cross, the Board of Health and the Public Health Service and a quantity of them mailed to every postmaster, county school superintendent, rural store, county health officer and Red Cross Chapter in the State, with a letter of appeal that they be distributed as widely as possible.

The second was a survey of the aftermath in eleven counties which suffered most from the epidemic for the purpose of disclosing a number of children left as orphans and needing assistance. As a result of this survey, 130 children were found and reported to the Kentucky Children's Home Association for placement. An Emergency Child's Welfare Bureau was established by the Red Cross and Associated Charities in Louisville and fifty-two children in fourteen families left dependent, were reported to this Bureau.

Since March 1st the disease has spread here and there in a more or less mild form, but as it could no longer be considered an emergency the Red Cross has withdrawn, leaving the situation in the hands of the proper organization, the Board of Health.

In Indiana the belief is that the influenza was brought into the state by sailors from the Great Lakes Naval Training Station, the disease spreading rapidly in the sections through which the main railroads pass.

As in Kentucky, the first wave took a very malignant form and was most prevalent among the ages from 18 to 35. The second was especially fatal for children, the third less severe and scattered over the entire state.

The Red Cross, the United States Public Health Service and the Board of Health worked well together. The Red Cross assigned 276 nurses and opened twenty-five emergency hospitals. The Board of Health organized an influenza committee, whose duty it was to organize each county and to instruct the local health officer regarding his duties. They have at present 695 local health officers, but they feel the need of the all-time health officer. Their health officer is not necessarily a physician, he may be a druggist, an undertaker, a doctor. The present program which the State Board is working on now is a full-time health officer in every county and an extra officer in every city with a population over 20,000.

In Ohio the epidemic had its beginning September 3rd at Camp Sherman, being brought there probably from an Eastern camp. On September 7th the first death occurred, the full toll at the Camp being 1100 for the first three months. The first wave swept over the larger cities and towns, the second over the rural sections, the third was scattered over the State. Here again we find the three organizations combining forces. The Red Cross opened twenty emergency hospitals and assigned seventy-seven nurses up to January 1st, 1919. The State Board of Health employed eighty doctors. During October, November, December and January 957 children were placed in institutions or private homes, most of them left dependent because of the epidemic.

As in Kentucky and Indiana they found that better health organization was necessary. The State has 2100 local heath officers, mostly untrained men, only four or five are full-time men, but the State Public Health Service is working on a program to have fewer local health officers and employ them as full-time men, dividing the State into 150 districts, in

each district a local health officer who is an efficient man.

The influenza in Kentucky has disclosed some pitiable conditions and many startling facts. People have died by the hundreds from ignorance and neglect. It would be impossible ever to have a sufficient number of doctors and nurses to handle an emergency such as the one through which we have just passed, and the only solution to the problem, which is still ours if the influenza is to be with us for the next two years, is to organize our health forces better and to teach the people to care for themselves and their families. We need to teach our citizens health principles, to care for the sick in their own homes, to prepare the proper kind of food for the patients, and at least the fundamental principles of sanitation for their own protection and for the safe guarding of their neighbors.

In the near future the Red Cross proposes to assist in such educational work. In fact, classes in hygiene and home care of the sick are already being organized in the State.. The Chapters are clamoring for them, but as the course may be taught only by a Red Cross nurse, difficulty in securing a sufficient number of nurses has delayed the work. The plan is to organize county by county, securing classes in as many communities in the county as possible, reaching preferably the women in the poorer homes who have little opportunity of gaining health instruction. These classes are to be self-supporting as far as possible, but Chapter funds may be used to fill a deficit. Of course the Welfare Nurse, for whom we are all working, will, as she goes in and out of the homes, help to spread still further the gospel that "Cleanliness is next to Godliness" and disease very often preventable.

The other solution is organization. You probably noticed that many of the questionnaires stated that the Red Cross was the only agency which could handle the situation should there be a return of the epidemic to that community, but in the Washington outline you recall that the Red Cross was to organize its forces and report to the local health officer. This year it was necessary in many instances to change the plan—just why I am not prepared to say, but it is recognized that the local health officer is the logical leader in all health matters in his community. According to the strength of your organization, supported by the State Board of Health, will the health conditions in our great Commonwealth of Kentucky improve. Let us organize our forces so perfectly that a recurrence of this, or any other epidemic, will never find us so unprepared or, "tech" us so ruthlessly.

And in speaking to this body to-day, this large group of county health officers, I feel moved to say that it remains for you, in greater measure than for any one else, to so organize your counties to so enlist the services of every possible agency operating in your community that they will feel their share of the responsibility and upon your pressing the button (so to speak) will come forward and in the words of General Pershing, answer, "We are here."

THE INFLUENZA EPIDEMIC, ITS LESSONS.*

By J. I. Whittenberg, Louisville.

While in the United States Public Health Service and stationed in the Extra Cantonment Zone, in New Albany and Jeffersonville doing sanitary work and on account of shortage of medical officers I was ordered to take charge of the influenza epidemic in that section. I immediately got in touch with the local doctors and asked for report of all cases of influenza. From the beginning, or at the time I took charge, there was not a day that I did not have turned into me less than 100 cases and ran as high as 398.

Two or three days after I was placed in charge of this work, there was ordered a quarantine by both State Boards of Health of Kentucky and Indiana: all schools, churches, picture shows, pool rooms and places of amusement were closed and all public gatherings were discouraged that were not a necessity. This the public heartily co-operated with us for sometime, and the number of cases of influenza began falling off. Soon the public got tamed down and as this was in reality a campaign of education, and the public began to feel the press of business and eased away from the request of the Boards. This practically left us with the ban on only churches, schools, picture shows and pool rooms. However, this held the spread of the disease down considerably, and the epidemic moved slower, and the daily reports of new cases dropped as low as 10, 15 and 20 per day.

The 17th day of October I was ordered to the Mountain section of Kentucky. Here the epidemic had gotten entirely away from us, and the greater part of the population was suffering with influenza and many with pneumonia. Three mountain counties I did not try to quarantine anyone except pneumonia. I felt it was beyond my reach and practically

*Read before the Eighth Annual State Conference or School of County and City Health Officers, Louisville, May 12-15, 1919.

all had been exposed that had not already had influenza, and I turned my attention to isolation the pneumonias. I found many entire families had already had influenza, and many convalescing slowly, and trying in their feeble way to wait on sick ones, a great number of which were taken with pneumonia.

In every case where it was possible, I absolutely isolated these cases, telling relatives and friends that their lungs had been left from influenza in as good condition for the seed of pneumonia, as a well manured and cultivated garden was for a fine crop of potatoes or cabbage. This proved to be very effective and easy for many to understand and gained the confidence of the people, and I am sure was the means of saving hundreds of lives in the rural district.

In many counties we established temporary hospitals; this was my instruction from the United States Public Health Service. Taking both influenza and pneumonia cases, always separating and cutting out lines of communication between the two diseases as far as possible, and insisting especially on getting all of the pneumonia cases into the hospitals, due to the lack of training along this line in the rural districts.

The 30th of November I was mustered out of the United States Public Health Service and was under the State Board of Health exclusively, with power to act as my best judgment directed me. I did not use more temporary hospitals. I felt that if part would stay at home, I would prefer to assist the local doctors in their practice, and quarantine the patient or patients in their own home, I taking the poor and indigent classes and answering emergency calls in some of the best classes the local doctors could not reach. In each county my organization consisted of County Board of Health, Red Cross Unit, Fiscal Court and in most cases a City Administration. It was indeed a pleasure in most all cases to see the hearty co-operation in this organization work and observe the intense work that they would and could do.

I always found it easy to get money to employ nurses, labor and conveyances. By eliminating the temporary hospitals and equipments for same, enabled me to put more nurses and help in the field and for this reason I thought it best to stop that expense for the few patients who were admitted to same. I found that a visiting nurse could visit a patient in most cases from one to three times in twenty-four hours, if necessary. I have seen a practical Red Cross nurse give as high as 20 sponge baths in 24 hours in closely populated places during this epidemic. As usual the Red Cross organization made a home run.

At this particular time, changing from the temporary hospital to intensive relief work in private homes and actually carrying out an organized county unit system, with nurses, only a few trained, and in some counties none trained, showed beyond question the great value of all-time health officer in each county, with nurse or nurses to actually carry on work, could have, I believe, prevented some counties from having influenza and the number lessened in all counties. This epidemic did not start all at once in all parts of the State, neither does any other epidemic.

If we had all-time health officers in this State, it would be just as easy for the State Board of Health to send out warnings to each county and it would be as effective as the weather bureau sending out warnings to the public of tornadoes, cyclones, freezes and heavy rain storms. This organization work in every county showed good results—about 15 in number—that I visited.

Thousands of lives could have been saved and untold suffering avoided had a working organization been in existence at the time the epidemic began. Valuable time was lost in effecting this organization by which millions of dollars could have been saved had we been thoroughly organized at the beginning.

Inoculation undoubtedly has come to stay in influenza and pneumonia. However, I have not been able to follow this up very closely on account of changing from place to place, organizing relief work. However, I am sure the number of cases of influenza were lessened and made milder or modified; while in sections the Mayo vaccine I feel sure controlled the pneumonias. In Jessamine county there were about 1,000 vaccinated, with only two pneumonia cases—they both were alcoholics and both died. In Madison county 500 were vaccinated, or approximately, with no pneumonias. Pneumonia, in other words, was conspicuously absent among the vaccinated.

This vaccine was given under varied conditions. Some before influenza, some while having influenza, some after having influenza. It did not seem to control the influenza so well, possibly due to the fact that it was not administered in time. In many cases where influenza did develop, the physician or nurse observing it personally, felt that the attack of influenza was made much milder.

In conclusion, First vaccination for influenza and pneumonia has come to stay.

Second, we owe much to Doctors Mayo and Rosenow for their labor and money in coming to our relief.

Third we will never be able to cope with disease successfully until we have an organi-

zation that is sensitive to the touch of a central body, whose duty it is to watch and keep in touch with the entire organization and give out the forecasts.

TRACHEOTOMY FOR EDEMA OF LARYNX COMPLICATING INFLUENZA.*

By Edwin Dargan Smith, Louisville.

So much has been written concerning influenza since the onset of the present pandemic, I hesitate to present another phase of this many-sided subject. Conversation with surgeons, practitioners and laryngologists has led me to believe that this particular complication has very seldom been recognized, and appropriate treatment has only been instituted in a regretfully small number of cases.

You will recall in the symposium on influenza held at our four hundred and twenty-third stated meeting that Lieut. Baldwin Lucke, in referring to pathology of influenza stated that in all cases there was marked congestion of the larynx and trachea. I have heard that in a number of cases autopsied at the camp there was no pathology found with the exception of laryngeal edema. Apparently none of those was recognized as such before death, as in no case was tracheotomy performed.

Another instance of the infrequency with which this condition is recognized and referred to the surgeon was that Capt. Emmanuel Klaus, in presenting the surgical complications of influenza at the same meeting, failed to even mention a similar case. I have spoken to Dr. Graves, our pathologist at the Louisville Public Hospital, and also to the chief resident, both of whom give experience in keeping with the findings at Camp Taylor.

All practitioners have seen patients with influenza die without developing signs of pneumonia or other distinct complication, but with moderate dyspnea, and perhaps no other marked symptoms. These usually are considered as due to toxemia, but I feel confident that a great many of these cases have been due to laryngeal edema, and might have been saved had proper treatment been instituted.

On January 1st, 1919, I was called to the Indiana Reformatory by Dr. C. F. Williams to see Mr. H. T. There was a history of an influenza onset five days before the patient came to my notice. He has a temperature of 102 degrees F. the second day, and showed characteristic symptoms. For ten hours before I saw him he had moderate dyspnea combined with suppressed husky articulation, and on two or three occasions had become cyanotic. Since three previous cases exhibiting similar symptoms had died at the reformatory, Dr. Williams was very anxious to have something done for this man.

On examination he showed slight cyanosis, flushed cheeks, and had an anxious expression. There was no cough, the neck was moderately swollen in the upper part but yielded on palpation and showed no evidence of Ludwig's angina. Distal examination revealed a swollen epiglottis. Laryngoscopic examination was not made. There was no evidence of pneumonia on percussion and auscultation. He did not have a retropharyngeal abscess.

With the history of three previous deaths of patients who exhibited identical symptoms the situation demanded immediate action, and Dr. Williams and I decided that tracheotomy should be done. I preferred to do a low tracheotomy, both to get below the edematous area and to prevent a disfiguring scar above the collar line. The skin was infiltrated and incised by transverse incision, the skin being "picked up" by the fingers to avoid cutting the external jugulars. The interspace between the sternohyoid muscles was located and these muscles with the underlying sternothyroid separated by blunt dissection. The trachea was fixed by tenaculum and two cartilage rings cut with knife; the tracheal opening was dilated and a middle-sized tube slipped into place. The tube was fixed by tapes and covered with moist dressing.

The patient inhaled deeply through the tube, and his face became a healthy pink. He was returned to his room the atmosphere of which was kept moist with creosote vapor to lessen the bronchial irritation. On the third day following operation his general appearance was very good, respiration free, and swelling practically subsided. On the fifth day the tube was removed and the patient made an uneventful recovery.

DISCUSSION:

Gaylord C. Hall: While I did not hear all of Dr. Smith's report there are several features which are worthy of discussion. In the first place it must be recognized that the case reported was in the nature of an emergency and as he very properly said something had to be done immediately.

The treatment of an ordinary case of edema of the glottis consists in ice applications, a thorough mercurial purge, the administration of rather large doses of pilocarpine, and scarification of the tissues above the larynx with a sharp-

*Read before the Jefferson County Medical Society.

pointed knife. Very often multiple scarifications over the epiglottis and false cords will reduce the edema so that tracheotomy will be unnecessary. However, in cases where there is marked dyspnea, the proper thing is an immediate tracheotomy.

As to whether intubation would be of any benefit in these cases: It would not for the reason that the intubation tube rests upon the false cords; whereas the edema in these cases is all above that point. If the intubation tube be pushed downward until the flanges rested upon the false cords, of course it would be speedily expelled.

E. D. Smith, (closing): As Dr. Hall has said, we were taught to use ice applications to the throat, the administration of pilocarpine, etc., with scarification of the tissues, in the treatment of edema of the glottis, with the expectation that the edema would subside under these measures. In the case reported, however, the patient being in another city and not under the constant observation of a specialist, I believed something more radical should be done. We could not afford to take the chance of using conservative treatment and waiting to see what might happen.

Having in mind the three fatal cases which had occurred a short time before under expectant treatment, I considered it wise in this instance to perform immediate tracheotomy. With uniform temperature, moist (creosote) vapor in the room, etc, I thought there would be slight danger of complications developing after the operation.

I hope by calling attention to the matter other cases of this kind will be recognized and appropriate treatment instituted, with the result that patients will be saved who might otherwise die from his seldom recognized complication of influenza.

Inhibition of Agglutination Test by Fresh Serum.—Dickshoorn discusses van Loghem's assertion that the inhibition which sometimes occurs when fresh serum is used for the agglutination test is due to the presence of some nonspecific substance. By heating or by letting the serum age, this inhibiting effect is overcome. Dikshoorn's experience with the blood of men vaccinated against typhus showed that the inhibiting action was most pronounced the greater the agglutinating potency. This suggests that probably the increase in the agglutinating property is due to an increase in the amboceptor contents and that this, in connection with the complement, in a strong concentration prevents the binding of the agglutinins. With fresh serum there seems to be a mutual binding of amboceptor, complement and antigen which interferes with agglutination.

CRANIAL FRACTURE: SUBTEMPORAL ROUTE PREFERRED IN INCREASED INTRA-CRANIAL PRESSURE.

By Leo Bloch, Louisville.

S. G., aged fifty-one, was struck on the head by footpads early in the evening of November 3rd, 1918. He was taken to the Louisville Public Hospital where first attention was rendered. He was admitted to the Jewish Hospital at nine thirty P. M.

Inspection revealed a three inch scalp wound in the right parieto-occipital region, but no evidence of fracture could be detected by careful examination after removal of the stitches. The patient seemed to be in a condition of "brain concussion" and was placed in bed with cold applications to the head and bromides internally.

The man had an extremely bad night, he was delirious, urination became involuntary, and he was later unable to swallow. After nine hours he developed left-sided hemiplegia, his pulse declined from 100 to 60, and there was slight elevation of temperature. Blood pressure systolic 170 mm. Hg., profound unconsciousness and sterterous breathing were evidences of increased intra-cranial pressure. The X-ray revealed a linear fracture of the skull from outer margin of the scalp wound extending downward toward the base, and immediate operation was then undertaken.

The right subtemporal route was selected; this route was made safe and sound by Dr. Harvey Cushing. Large bone exposure was made, working downward and backward, thus avoiding the cortical centers. Several extra-dural blood clots were removed. The brain had been pushed toward the middle of the skull due to extensive hemorrhage. The hemorrhage was controlled in the dura by silk ligatures and packing arrested the diploic hemorrhage.

After a few minutes the brain began to pulsate, so opening of the dura was unnecessary. In all true decompression operations the dura is opened. The packing was allowed to remain for thirty-six hours and was then removed.

The subtemporal route is the one of choice especially when cranial fracture occurs on the right side; the speech center is thus avoided. Few clinical ill-results are seen as this is the silent area of the brain. The temporal bone is very thin and the brain is easily exposed. The temporal muscles and fascia give good

*Read before the Jefferson County Medical Society.

closure of the wound. Vertical incision offers best control of hemorrhage and drainage. On account of the proximity to the middle meningeal artery the ear, tumors and abscesses are more likely to be found in this region.

The patient made an uninterrupted recovery with absolutely no ill-effects from either the injury or the operative procedure.

TRAUMATIC RUPTURE OF THE INTESTINE; CASE REPORT.*

By C. Guy Forsee, Louisville.

R. P., aged nineteen years, male, white, single, was riding on the tail gate of a Ford truck when it was struck by a large automobile on December 30th, 1918. The accident occurred about eight o'clock P. M. The young man had eaten a full meal about six P. M.

I saw him at the Sts. Mary and Elizabeth Hospital about two hours after the accident, and opened his abdomen through a left rectus incision above the umbilicus at eleven P. M. He had a slight brush burn on his back and a small abrasion of the upper part of the abdomen. He was neither struck nor run over. My belief is that the great impact of the colliding cars tore his intestine because it happened to be loaded by a meal in the process of digestion.

The patient had a complete division or rupture of the small intestine four to six inches below where the duodenum crosses the vertebra. This tear extended about three and a half inches into the mesentery. There was very little soiling of the peritoneum as the mucous membrane protruded through an opening and stopped the emptying of the intestinal contents into the cavity. The peritoneum was torn off the anterior surface of the colon over a space of two and a half by three and a half inches. This was sutured in place. The intestine was closed by an end-to-side anastomosis, No. 0 chromic catgut being used for this purpose.

The patient vomited occasionally for six days. The vomitus was green or brown, and as much as one pint was regurgitated at a time during the fourth and fifth days. On the sixth day the incision opened sufficiently to permit drainage of bile and pancreatic juice which produced great excoriation of the surrounding skin. The drainage continued for about twenty-four hours and then ceased. Healing from that time on was rapid. The patient returned to his home on January 24th, 1919.

*Read before the Jefferson County Medical Society.

DISCUSSION:

Leo Bloch: I was glad to hear what Dr. Forsee had to say about the advisability of operating upon patients with symptoms of internal injury without external evidence. I regret to say that on two occasions I failed to operate under such circumstances. Both patients showed only slight signs of shock and were in good physical condition. There was no external evidence of internal injury, and temporizing methods of treatment seemed advisable. Both patients died and necropsy showed rupture of the intestine. Both could doubtless have been saved by immediate operation.

J. G. Sherrill: Dr. Forsee is certainly to be commended on the plan of treatment he pursued in the case reported. There is a tendency on the part of many of us to be too conservative and delay operation where there is no evidence of injury to the abdominal parietes and where there is only a suspicion of internal damage. I recall a case of this kind which emphasizes this point. A man was struck above the pubic bone by a large iron hammer. He at first had few symptoms, his pulse was 80, but twelve hours later he seemed to be getting worse. Subsequent events showed that he sustained rupture of the small intestine.

One should always bear in mind that where a patient has sustained severe abdominal injury followed by shock and evidence of internal hemorrhage, although there may be but slight evidence of external damage, operation is the safest plan of procedure. In the case I have mentioned there was nothing to indicate that the man had received a severe blow upon the abdomen excepting the history, he had no local contusion.

We ought to pay more attention to the history given by the patient in cases of this kind. I think many times we are inclined to think the patient does not know what he is talking about. If we pay particular attention to what the patient tells us, if he is rational, we will often secure sufficient evidence to lead to a correct conclusion whereas otherwise we may be misled.

Whenever the surgeon is in doubt about there having occurred an internal injury in a case of this kind, the safest plan is immediate exploration.

E. S. Allen: The case reported is unusual and in some respects remarkable. It is very fortunate for the patient that Dr. Forsee had the foresight to open the abdomen promptly.

In my intestinal work I nearly always reinforce catgut sutures with two rows of silk to obviate the danger of leakage. However, as Dr. Forsee's patient did well after the operation no criticism should be offered. Careful technique is required to obtain a satisfactory result where perforation of the intestine has occurred.

C. G. Forsee, (closing): One reason why I thought immediate operation was indicated in the case reported was that the patient had considerable dullness and rigidity in the left upper abdominal quadrant. My belief before making the incision was that he had sustained a ruptnre of the spleen.

Upon opening the abdomen there was found only a moderate amount of hemorrhage and little soiling of the peritoneum. The mucous membrane had protruded through the opening and stopped intestinal leakage into the cavity.

The man had a full stomach at the time of the accident. He vomited the entire stomach contents after being placed in bed. If I had another similar case I would empty the stomach on the table.

I used a double row of chromic catgut sutures for the intestinal closure. I always hesitate about using non-absorbable suture material in the intestine. I usually employ fine chromic catgut for this purpose.

When drainage began through the incision six days post-operative I feared a grave mistake had been made in not reinforcing the suture line with silk; but the fistula closed within twenty-four hours.

The pancreatic secretion discharged from the incision was sufficient to excoriate the skin over a wide area.

THE VENEREAL CLINIC.*

By Herbert Bronner, Luisville.

The Venereal Clinic if properly conducted should serve two purposes. It should provide adequate and scientific treatment for the venereal diseases and it should serve as a focus for the dissemination of knowledge about these diseases. If the Clinic fulfills both of these conditions, we believe that it serves as one of the greatest constructive forces in the fight against venereal diseases and we are frank to say that only those agents that are constructive in character are of value in this fight. Our goal, therefore, in the clinic, is to treat and render non-infectious as many foci as possible and to educate as many patients as possible as to the danger of the venereal diseases.

If the venereal clinic is to offer proper facilities for treatment, it must meet certain requirements. We shall endeavor to outline what these requirements are and to show how they have been carried out in the local clinic.

The first requirement is a competent staff of physicians. The physicians must have sufficient training in the diagnosis and treatment of gonorrhea, syphilis and chancroid in their various phases to justify their appointment to the clinic. There must be a sufficient number of physicians to handle the patients so that each patient receives the proper amount of time necessary to the examination, diagnosis and treatment of the cases.

In the Louisville clinic there is a staff of ten physicians. Genito-urinary cases are treated from nine until ten A. M. every morning; syphilis from two until three P. M. every afternoon, and both genito-urinary and syphilitic cases from seven thirty until eight thirty every night. When the present venereal clinic was established, which clinic represents the combined efforts of the already established genito-urinary and syphilitic departments of the hospital with the U. S. Public Health Service, it was decided to add the night clinic hour. This hour was a success from the beginning. We believe that it is essential in any large city. We found that a great many patients who never attended the clinic before, came to the night hour and furthermore we learned that others who had attended the day hour irregularly came to the night hours with great regularity. The average number of treatments given at the night clinic is fifty-two. The staff of physicians consists of six men and four women. As far as possible the female patients are treated by the women on the staff.

There must be an adequate nursing staff. It was soon found in a large clinic, such as the local one, that the staff physicians were so busy with the examination and diagnosis of cases that it was impossible for them to carry out all the routine treatments such as irrigations, injections, etc. We, therefore, provided experienced nurses, men to handle the male patients, women the female patients. These nurses have done splendid work and we have been particularly fortunate in the type of men and women that we have obtained. The male nurses sterilize all instruments, under instructions of the physicians, give the irrigations, give injections of mercury, dress genital lesions, etc. The female nurses give the douches, make applications to the cervix, etc.

There must be a follow-up system. It is a well known fact that most dispensary patients will only take treatment long enough to remove visible evidence of disease or until those symptoms which cause pain and other annoyance are removed. But we must not be content with this. Therefore, the modern venereal clinic must provide an adequate follow-up system. The system in vogue at our clinic is first to send a card to a patient who

*Read before the Eighth Annual State Conference or School of County and City Health Officers, Louisville, May 12-15, 1919.

has failed to return at such a time as he or she is told to. This card reads as follows:

"You are requested to return on or before ———. You need further treatment or observation. For your own good and the protection of others this card is sent you. Present this notice at the desk."

This card has proven to be very effective in bringing many patients back to the clinic. Where, however, this card does not prove sufficient, a nurse is sent to see the patient and a personal appeal is made. Between the cards and the personal calls, a great many more patients are kept in line than under the old system.

There must be adequate laboratory facilities. We cannot lay enough stress on the importance of this feature. It is inconceivable that a venereal clinic can be conducted without proper laboratory aid. We need the laboratory not only in the diagnosis of the venereal diseases but also to inform us as to what progress the patient is making and finally to determine as to whether or not there is a cure.

The following routine examination is made of every new case admitted to the G.-U. Department of the Clinic.

1. Smears to be taken of any discharge and sent to the laboratory. The result to be recorded on history sheet of patient.

2. A macroscopic examination of urine and in any cases the clinician sees fit, a microscopic examination of urine, the same to be recorded on patient's history sheet.

3. A routine Wassermann to be done on all cases, the clinician being the judge in special cases sent to the clinic and in children.

4. In men, the clinician to be the judge, a prostatic examination made and smears taken of any excretion expressed; the findings of examination and report of smear to be recorded on history sheet.

5. In women, the different smears, whether from urethra, cervix, etc., to be charted, that the clinician may know from the result of laboratory report, in which part of the tract the specific infection is present, and the findings of examination and laboratory reports to be recorded on patient's history sheet.

For the syphilitic cases facilities should be provided for a dark field examination on all suspicious lesions for the spirocheta pallida. It is needless to add that the laboratory should provide a good technique for the performance of the Wassermann test. As the laboratory is such a necessary adjunct to the maintenance of a venereal clinic, it is very important that the laboratory standard should be high both as regards the personnel, the equipment and the methods employed. The value of a Wassermann or the report on a smear depends largely on who makes it and inasmuch as the final discharge of patients whether syphilitic or gonorrheal depends on laboratory reports, we cannot lay too much stress on high standards for our laboratory facilities.

The laboratory work at our local clinic has been under the care of Dr. Graves who is the serologist of the City Hospital. In order to show how largely the laboratory is being used and also to show the increase in this feature of the work, I give the following table furnished by Dr. Graves:

	Wassermann	G. C. Smears
January	60	
February	114	
March	120	
April	89	
May	170	
June	189	40
July	240	61
August	223	41
September	238	117
October	202	244
November	174	387
December	166	570
1919		
January	254	619
February	254	613
1918		

There must be an adequate system of keeping records. A complete record should be kept of every case treated at the clinic. In our clinic each case has a case card on which all data are kept. This data includes personal history, history of disease, physical examination, laboratory examination, treatment, etc.

In addition to the case cards, very elaborate reports are kept on the work of the clinic, so that at any time we can obtain information as to the daily, monthly or yearly status of the clinic. For those who are interested we shall be glad to show the forms which are used.

The records of the patients should not be open to inspection by the public and only to such persons as may be authorized to inspect such records. As Dr. Emerson says: "The propriety of such a requirement must be obvious, and as a matter of fact is accepted by those who maintain dispensaries which serve the patients well and have business standards of administration, as well as clinical records adequate and available for study by the physicians in charge."

The clinic should provide salvarsan for the treatment of syphilitic cases. Such provision is made at the local clinic. Dr. W. J. Young

is in active charge of this work. The routine treatment carried out by him is as follows:

A Wassermann is taken on each case admitted to the clinic. The infectious cases are given six salvarsans, one each week, these to be followed by fifteen mercury salicylate injections at weekly intervals. The course of treatment constitutes 21 weeks. The patient is rested from syphilitic treatment and put on iron tonic for four to six weeks. Another Wassermann taken as an index to medicine previously given and fifteen more mercury salicylates in above manner. Another rest period and fifteen more mercury salicylates are given. If the patient has a negative Wassermann after last rest period he or she is given a rest of five months and a Wassermann taken. If this Wassermann is also negative another period of rest is given and a Wassermann taken in six months. Should these last three Wassermanns taken in one year prove negative the spinal fluid is taken and this proving negative patient is discharged as clinically cured. The mercury salicylate suspension is 16 2-3 per cent in olive oil. The routine dose is one-half grain weekly for children, one to one and one-half grains for adults. The salvarsan is prepared in bulk mixture usually ten tubes at a time. It is given ten c.c. to a decigram. The routine dose of salvarsan is .3 gm. and of neosalvarsan .45 gm. for adults, .16 gm. to .0 gm. for children. Routine .2 gm. for children. In treatment both by mercury and salvarsan the treatment is varied to meet special cases. Mercury salicylate is given each afternoon and night. Salvarsan is given four afternoons a week, the male and female and white and colored being separated.

It might be well to give a very brief outline of the manner in which gonorrhea is handled. Acute gonorrhea in the male, as soon as possible is treated either by irrigation of potassium permanganate or hand injections of the organic silver salts or a combination treatment. Hygienic rules, of course, are given to each patient. Chronic urethritis is treated with Ag. NO_3 irrigations, or instillations, massage, dilatations and endoscopic applications, etc. The female patients are treated with antiseptic douches, local applications, etc. Complications are treated as they arise, those requiring hospital attention being sent into the house.

There must be a standard procedure governing the discharge of patients.

The importance of this regulation is very obvious.

At the local clinic the following requirements must be met before a patient, under treatment for gonorrhea, is discharged.

MALE

1. Freedom from discharge.
2. Clear urine.
3. After a provocative injection of silver nitrate solution or passage of a sound, the inflammatory discharge resulting therefrom must be negative for gonococci.
4. The pus expressed from the urethra by prostatic massage must be negative for gonococci on five successive examinations at intervals of one week.

FEMALE

1. No urethral or vaginal discharge.
2. Two successive examinations (negative) for gonococci of secretions of the urethra, vagina and cervix, at an interval of forty-eight hours followed by a weekly negative examination for four successive weeks.

The regulations regarding the discharge of syphilitic cases have already been mentioned.

The educational side of the clinic should be made a feature. Every patient should be taught with the hope that he or she will teach others. Instruction should be given these patients as to the danger of these diseases to themselves if treatment be neglected. Instruction should be given as to measures to prevent the spread of the disease to others. At our clinic this educational feature is compulsory and a record is kept of the work done along this line.

The educational propaganda is carried on by personal talks to the patients, by free distribution of easily understood literature and by means of striking placards in the clinic rooms.

In closing we desire to give you a few statistics in order to show the extent of the work which is being carried on at the Louisville clinic.

New patients treated from January 14, 1918, to April 30, 1919, 4564.

Cases under treatment April 30, 1919, 1085.

Number of treatments from July, 1918, to April 30, 1919, 21910.

Number of treatments increased from 1719 in July, 1918, to 2687 in April, 1919.

The daily average treatments increased from 66 in July, 1918, to 103 in April, 1919.

The distribution of new cases since July 1, 1918 was as follows:

Syphilis	993
Gonorrhea	1018
Chancroid	31
Mixed (gon. and syph.)	171

Number of doses of salvarsan given from January 14, 1918, to April 30, 1919, 3826.

RESULTS OF X-RAY THERAPY IN TREATMENT OF NON-MALIGNANT UTERINE HEMORRHAGE.*

By J. Paul Keith, Louisville.

The basis of this report is obtained from personal observation in the treatment of sixteen cases which have come for treatment during the past two years. As the title suggests, no case of malignancy has been included. No cases have been treated in which uterine fibroids or tumors of uterine adnexa could be demonstrated. All of the series are of the type that had not, or would not be benefited by medical or surgical treatment, unless the patient was subjected to a complete hysterectomy. A brief history and summary of the cases follow, the points of particular interest will be spoken of later.

The oldest patient treated was forty-seven years of age, the youngest, sixteen, the average age being thirty-five years and four months.

The duration of bleeding was from four or five months to five years, all of the series had had periods of more than one month of continuous bleeding. Four had bled so profusely that both patient and physician had become alarmed, and it was realized that the future health if not the life of the patient was at stake.

Eight of the number had been curretted once, three of the eight had been curetted twice, one had been curetted three times, and one had submitted to curettage four times. All of the cases but one had obtained temporary relief for a few months only. Five had had a ventral suspension, one a tracheorrhaphy, and one a tubal resection at the time of curettment.

Seven of this number had borne children; one aged forty, one aborted at age of eighteen, her menstrual disturbance dating from this time. Two of the youngest patients, aged seventeen and twenty-five respectively, had aborted in the third month of pregnancy and did not receive relief by curettment except for the month following operation.

TECHNIC OF TREATMENT

In all the cases, the points of entrance on the skin surface were four areas anterior and four areas posterior, each of the skin areas being treated separately, the remaining three areas being protected by sheet lead or protective rubber cloth incorporated with lead. The first treatment consisted of three doses given on separate days, the subsequent treatments being given at intervals of ten to fifteen days, and given in two doses on separate days. No attempt was made to protect the ovarian region, as only one of the series expressed a desire for children. The major portion had borne from two to five children and did not expect or care for more pregnancies.

RESULTS

One case received only one full treatment of three doses, two of the most stubborn cases received five full treatments over a period of approximately two months, their ages were thirty-one and thirty-four respectively. One had borne two children and had been curetted four times, having a ventral suspension and tracheorrhaphy at the time of curettment, the other had never been pregnant, she too had had one curettment with a ventral suspension. Our custom has been if the hemorrhage ceases, no treatment is given until menstruation again appears and then none is given if the menstrual period approaches a normal one.

In most of the cases where as many as three treatments were given, no menstruation appeared for six to eight months. The average treatment per patient was two and six-sevenths of a full treatment.

No case is included in this report in which six months have not elapsed without any return of their bleeding. Only one case has returned with a recurrence, this one being seventeen years of age and had probably had a miscarriage.

Our experience is that the nearer the menopause the fewer the treatments required for results. The more vigorous the patient, the greater the number of treatments required.

We wish to report in detail one of the most stubborn cases treated.

Miss K. W., age thirty-one, first menstruation at the age of fourteen, normal until twenty-six years of age when she began with a period of from ten to twelve days gradually increasing each month in amount and number of days until the flow was continuous, being more profuse for several days when the normal menstruation period was due. This continued three years, always much worse during the fall and winter months.

For the first two years, during the summer months she would have a cessation of her bleeding always becoming worse as soon as the winter months came.

In November, 1916, the fourth year of her bleeding, she bled very profusely and continuously the entire month, being confined to bed. On December 26, 1916, she consulted Dr. Irvin Abell, the following day was curetted and a ventral suspension was done.

The following month her menstruation ap-

*Read before the Jefferson County Medical Society,

peared, lasting six days, appearing again on the twenty-first day, lasting ten or twelve days. This continued with a gradual increase in the number of days until in July her bleeding was continuous. In November her bleeding became more profuse and on December 26, 1917, she was referred to us for treatment. Treatments were given on December 26, 27, 28, 1917, January 8th and 24th, February 11th and 15th and on March 2, 1918. In January she had four days cessation of bleeding, during February the flow was very scant with a normal flow at the regular period. Since this time she had not menstruated until in November menstruation appeared the day after taking a few large doses of quinine as a preventative against influenza. This menstruation was scanty and lasted eight or ten days.

ADVANTAGES AND DISADVANTAGES.

The treatments are painless, there is no loss of time, the fear of an anesthetic is not experienced. It is more conservative and supplants a hysterectomy. The only disadvantages are possibility of permanent sterility, in cases where an idiosyncrasy for the Rays exists an occasional tanning of the skin with some atrophy of the glands of the skin. Nausea in about 50 per cent of the cases is distressing, usually lasting from two to three to twenty-four or forty-eight hours. Very few have nausea at the first or second treatment.

DISCUSSION:

J. R. Wathen: Dr. Keith has given us a very important and timely paper. Dr. Howard Kelley, of Johns-Hopkins, at the last meeting of the American Gynecological Association, read an elaborate paper on the use of radium, also the X-ray, in the t reatxent of fibroid tumors of the uterus, and uterine hemorrhage. He demonstrated by keeping careful record of his patients that under radium or X-ray treatment hemorrhage had ceased and large fibroid tumors had markedly diminished in size,—in some instances after only one application, in others after several treatments. While it is too early to say what the final outcome will be, Dr. Kelly is very enthusiastic on the subject and hopeful as to permanence of the results.

Dr. Kelly emphasized one point alluded to by Dr. Keith, i e., that radium was of greater value in patients about the menopause, and of less value in younger women where the ovaries are active. There is probably no one doing abdominal surgery who has not been confronted with patients having uterine hemorrhage about the menopause, who have gone the rounds of several surgeons, who have been curetted, etc., and shortly the hemorrhage recurs. What is best to be done in such cases? In the majority we now perform hystero-oophorectomy. In women just before the menopause there seems to be an increase in ovarion activity which is instrumental in causing the hemorrhage. If the ovaries are removed when hysterectomy is performed hemorrhage is checked; or the X-ray or radium treatment may be used with good results in certain cases. The crux of the situation is not the uterus, but the presence of the ovaries.

If the results are permanent in cases such as reported by Dr. Keith and Dr. Kelly, under the radium or x-ray treatment, it will certainly be a great boon to the profession, because there are many patients who are not in condition to withstand radical surgery on account of cardiac complications, Bright's disease, and for many other reasons. I believe there is an enormous field for this class of work, and am glad Dr. Keith is giving it a thorough trial.

Dr. Kelly in his paper reported one hundred cases, most of them fibroid tumors, he has followed the patients and kept careful record of the work, and I hope Dr. Keith will do likewise. If hemorrhage recurs the X-ray treatment may be repeated as required, and if the patient can be carried through the menopause without loss of blood and without radical operation, the method certainly possesses great advantage.

Louis Frank: I have been much interested in the cases reported by Dr. Keith, because this is a line of work with which I have had some experience, not so much from an X-ray standpoint as the use of radium. However, several patients have been subjected to treatment with the X-ray with about the same results as in those treated with radium. The X-ray was employed in one case in which there was a general myomatous involvement of the uterus which was three or four times its normal size. The disadvantage of the X-ray, or I might say the advantage of radium, is the more rapid action of radium and the greater certainty of successful and permanent results.

We have treated quite a number of cases of myopathic bleeding, and also uterine hemorrhage where figroid tumors were present, we have treated cases in which the bleeding continued notwithstanding the fact that the ovaries and tubes had been removed, and without exception we have secured 100 per cent relief from the use of radium. We have been able to follow most of the patients subjected to radium treatment during the twenty-two months we have been using it, and in every instance of myopathic bleeding the results have been all that could be asked. The fibroid tumors have all been reduced in size until they have become practically innocuous.

The worst case we have treated was a patient of Dr. Tuley's with a large fibroid tumor upon whom radium was used, not with the idea of bringing about a cure, but to cause cessation

of the bleeding so she might later be brought to operation. Transfusion was considered but deemed inadvisable because the woman was in a state of chronic anemia with myocardial degeneration. Under these circumstances I believe it would be dangerous to introduce into the circulation 500 or 1000 c.c. of blood. The patient was given radium treatment. In discussing this matter we are probably agreed that the same type of rays are operative in both radium and the X-ray, i.e., the Gamma rays, and that changes are produced in the endothelium of the vessels and in the vessels themselves probably by increasing the fibrous or surrounding connective tissue which later "chokes the circulation off" and thus induces cirrhosis which effectually arrests the bleeding. The individual to whom I have just referred was so much improved that radium was continued, and while the tumor is still present it has been reduced to an exceedingly small size and gives her no trouble.

One patient from whom I received a letter to-day, has begun to bleed again after more than a year. She also has a fibroid tumor but was given only one radium treatment. She had been operated upon several times, once for varicose veins of the urinary bladder which were removed by fulguration. She will be subjected to further radium treatment. I think in the Gamma rays, as applied either by the X-ray or by radium, we have a means of arresting myopathic hemorrhage almost without exception. The disadvantages have been clearly stated by Dr. Keith. Some of the younger women, particularly those seen now during the war period, object to having sterility produced. I find that young women who consult me now want to bear children, which was not altogether true four or five years ago. The certainty of sterility is probably the greatest objection to radium. However, in women about the menopause or who have borne a number of children this objection does not obtain.

Some of the earliest patients treated with radium had been subjected to salpingo-oophorectomy, but the bleeding continued. I believe it is a fact in these cases, that notwithstanding removal of the ovaries and tubes, there is present as a result of the operation or the disease for which it was performed, a source of blood supply other than that which is normal to the uterus, perhaps through omental or intestinal adhesions, and these patients will continue to bleed after the operation.

In another class of cases where bleeding had ceased, but where gonococci were still present in the uterine secretions, i.e., in which there was a mild chronic septic process within the uterus, the introduction of radium caused absolute cessation of all manifestations.

My preference is for radium, but unless this agent is used with great caution every patient is rendered sterile. Where we have used it carefully in young women for excessive bleeding permanent amenorrhea has not been induced. The women have all begun to menstruate again after six to twelve months. The emanations must not be permitted to penetrate the uterus for nearly so long a period as where the induction of sterility is not an objection.

In practically every case where we have used radium we have subjected the patient to curettment for microscopic diagnosis. In one instance we found a beginning carcinoma of the body of the uterus; in another there was a suspicious area in the cervix, which proved to be a very early beginning of carcinoma. These two women now present no symptoms; they are still under observation and will continue so.

DORSO-LUMBAR MYELITIS; CASE REPORT.*

By A. W. Nickell, Louisville.

December 23rd, 1918, I was called to see Miss W., white, aged twenty-nine years, who had an attack of influenza in October, 1918, followed by left-sided frank lobar pneumonia. Resolution occurred in about the usual time and she became apparently well in every respect.

On December 22nd she began complaining of "heaviness" in her back with pain in her lower limbs, and said she did not rest well at night. At my first visit, December 23rd, her mother was walking her about the room, she was suffering from pain in her back and abdomen, and said she was unable to void her urine. Examination revealed that the urinary bladder was so markedly distended that it reached almost to the umbilicus. A catheter was immediattely introduced and thirty-four ounces of urine withdrawn. The following family and personal history was obtained then and subsequently:

Both parents living and in excellent health; nothing in the parental history of importance excepting that her mother had always been neurotic. The patient stated that she had also been "nervous" all her life. There was no history of epilepsy, and her mentality was practically normal; she was one of five children, the others being in good health. No history of diabetes, syphilis or alcoholism; birth normal; patient walked and spoke naturally. She had the ordinary exanthemata during her childhood; no adult diseases excepting influenza as already stated. There was no history of enuresis, nail biting, tran-

*Clinical report before the Jefferson County Medical Society.

ma, occupational toxemia, nor convulsions. Her menses were normal. No osseous cranial deformity nor asymmetry; smell and vision normal; eye movements unrestricted, no nystagmus nor diplopia; pupils reacted normally to light and accommodation. Motor and sensory eye reflexes normal; cornea and conjunctiva normal; eyes closed properly; whistle and Rosenbach test O. K. Hearing perfect, no tinnitus, diapason test negative; fauces normal, tongue straight, no scars, no tremor; taste and deglutition normal; tonsils not diseased, shoulders and neck perfect.

Upper extremity: no atrophy nor hypertrophy; no spasm nor twitching. Nerve trunks not tender, no tremor; rest, static and sterrognosis O. K. Light touch: pain, thermal and vaso-motor tests normal. Trunk: power normal, spine showed no deformity; epigastric and abdominal reflexes slightly diminished; vesical and rectal sensation and sphincteric function entirely absent. Light touch diminished, deep touch detected; thermal diminished, vaso-motor one plus.

Lower extremity: atrophy plus, legs flabby, no spasm; Kernig sign absent, muscular power diminished; patellar reflex normal, achilles, ankle clonus, Babinsky, Chaddock, Oppenheim, absent; light and deep touch diminished; Romberg test and finger and nose test normal; gait not ataxic.

Status corporis: medium nutrition, heart and arteries normal. No Wassermann nor other blood tests were necessary. There were no symptoms nor history indicative of lues. Lungs, abdomen, liver, skin, joints, normal; cerebro-spinal fluid not tested. The urine showed nothing of importance excepting three plus toxemia.

The diagnosis was accordingly made of dorso-lumbar myelitis. Multiple sclerosis was considered but was excluded from the fact that she had no spasticity, no Babinsky, and none of the reflexes were exaggerated as would be expected in multiple sclerosis. Involvement of higher portions of the spinal cord and brain lesions were likewise excluded. It seemed certain that the trouble was located in the lumbar region because practically all the nerves which arise from the dorso-pudendae plexus were involved, i.e., the gluteal branches, the perforating, the greater and lesser sciatic, with two branches from the lumbar plexus. Both light and deep touch of the abdomen and legs were markedly diminished.

A trained nurse was in charge of the patient for about four weeks, and catheterization had to be practiced every six hours. Cold applications and faradism were used, and the three principal drugs indicated in such cases administered, i.e. iodide of potassium, urotropin to prevent vesical infection, and strychnine. The patient not making satisfactory progress, I became a little anxious and at my suggestion, Dr. Herbert Bronner saw the patient with me. We were perfectly agreed in the diagnosis and treatment, not a single change being made. Loss of both vesical and rectal sphincteric control occurred in the course of the trouble.

It is now nearly eight weeks since the patient first came under my observation. She now has normal control of her vesical sphincter, and there is no residual urine. She has also regained control of her rectal sphincter and is practically well.

Later Report: March 12th, 1919. The patient is now perfectly well, motoring whereever she pleases; she looks and feels as well as ever.

DISCUSSION:

Herber Bronner: When I saw the patient with Dr. Nickell the motor and sensory symptoms in the legs had about subsided and rectal sphincteric control had been regained; but she had complete urinary retention. After carefully considering the history I concluded that she had a mild form of myelitis toxic in origin which had caused the retention of urine,—and gave a favorable prognosis. The patient began to void her urine normally about four weeks after my visit.

I am aware that the chief cause of myelitis is syphilis, but there was nothing in the history of this case to justify such a diagnosis; and her rapid recovery eliminated this disease. It has been my experience that in syphilitic myelitis the response to treatment is much less rapid. However, Dr. Nickell and I kept the idea of syphilis in mind, and if the patient had not improved rapidly we would have resorted to two other diagnostic measures, i.e., lumbar puncture and cystoscopic examination.

The literature on influenza with its complications and sequelae has been quite extensive. The most interesting article I have seen on the subject is by Jelliffe, of New York, who says the disease may involve the brain, nerves and meninges, that both multiple neuritis and myelitis have been observed. He has seen several cases of myelitis which had their origin in influenza, and states that while some of them were grave in character the majority were mild and the progress was favorable. I believe Dr. Nickell's case belongs to the latter type.

J. Hunter Peak: Dr. Nickell made no reference to the fact that I also saw the patient with him. In cases of this kind, aside from the loss of vesical and rectal sphincteric control, abolition of sensation is usually noted, as was manifest

in this instance. This feature probably not being realized by the nurse the patient was burned by the application of hot water bottles, there being quite a large blister on one leg. Such accidents are not uncommon because the extremities are devoid of sensation and of course the patient does not know the bottle is hot enough to cause a burn.

I have no comment to make with reference to the treatment which has been entirely successful, and I understand the patient is now well.

W. E. Gardner: Perhaps the low location of the cord lesion accounts for the lack of paralysis in the case reported. In myelitis there is usually almost complete paralysis of the lower extremities. I do not understand the absence of a positive Babinsky and ankle clonus if the dorsal portion of the cord was involved. A lesion of the crossed pyramidal tract always gives a positive Babinsky and ankle clonus, and it is almost impossible to have myelitis without involvement of the crossed pyramidal tract. The lesion in this case being so low and probably local in character perhaps the crossed pyramidal tract was not involved, and for that reason the Babinsky and ankle clonus were absent.

There is usually a tendency to spasticity in the lower extremities if the dorsal segments of the cord are involved, and I am inclined to believe that the lesion in this case was confined to the lumbar region, otherwise, even after the patient has made a fairly good recovery from the motor disturbances, with disappearance of anesthesia, and improvement in the bladder condition, spastitity and contractures will usually follow. I hope that this will not occur in the case reported, on account of the very low location of the cord lesion.

This was undoubtedly a myelitis, but certainly a very interesting and atypical case, and I am very glad to have heard the report.

A. W. Nickell, (closing): There was no spasticity in the case reported such as is usually noted in multiple sclerosis. I repeatedly tried to elicit a Babinsky and could not do so, nor was there present any ankle clonus. The planter reflexes were normal. I neglected to mention that Dr. Peak saw the patient with me and am glad he called attention to the matter.

Dr. Jelliffe says spastic cases have a favorable prognosis, but in plastic cases the patient is likely to have further trouble. He states that in private practice he has encountered only one case such as I have reported. They are very rare, and for that reason I thought it might be of interest to the members of the society.

The patient has made a satisfactory recovery under the treatment outlined.

NATIONAL ADMINISTRATION OF THE FOOD AND DRUG LAWS.*

By H. W. Wiley, Washington, D. C.

We are now much interested in the phrase "concurrent legislation." One would think from the amount of comment which has been incited by this phrase that it was something new, but such is not the case. From the time of the enactment of the National Food and Drug Act, June 30, 1906, the states have been adopting "concurrent legislation." In some instances the exact verbiage of the National Food and Drugs Act has been copied. In other instances the definitions of adulteration and misbrandings have been adopted. Thus what is held up as the reason for believing that the constitutional amendment prohibiting the manufacture and sale of intoxicating beverages is unconstitutional by reason of its inclusion of the term "concurrent legislation" is simply the erection of an imaginary condition in place of acknowledging an established fact. There is, to be sure, one striking difference between the National Prohibition Amendment and the National Food and Drugs Act. In the latter case commerce in adulterated foods and drugs is forbidden between the states but not prohibited within the *State.* In the other case not only is commerce in intoxicating beverages forbidden between the states but the manufacture of them within the State is also outlawed. This fact is essentially the only reason why national prohibition might not have been secured by act of Congress in time of peace as it actually has been accomplished in time of war. In other words, the right to police the State is the function of the State itself unless delivered by the constitution to the Federal Government. Forty-five out of the forty-eight states have voluntarily given up their sole right within the state and committed this right to the National government. Amending the constitution is a difficult and time consuming procedure. It has some advantages and some disadvantages. Among the latter is this: That if the country should change its mind respecting a constitutional provision, that objectionable provision could not be eliminated except by the consent of the legislatures of three-quarters of the states. We therefore, I think, might well be content to let the administration of the National Food and Drugs Act remain as it is, fully collaborating "concurrently" and otherwise with the laws, of the various states.

One of the first things which I attempted to

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accomplish as chief of the Bureau of Chemistry was the harmonizing of the state and federal officials. To this end I succeeded in having one of the officials in each of the states appointed as an officer of the federal law. This process of collaboration has been extended so as to practically make the officials, national and state, one large, harmonious, co-operative body. The efficiency of the laws depends first on their character and second upon the zeal, activity and enthusiasm of the federal and state officials. Among all the state officials of the country during my administration there was none more helpful and more enthusiastically in harmony with federal and state activities than the officials of the State of Kentucky. Since my retirement I am glad to know that this enthusiasm and spirit of collaboration have still kept Kentucky to the fore.

While the federal law is by no means a perfect one, it has accomplished great things. It has been so long a time now since I retired from official activity that I can look back upon the early days of food administration in quite a neutral and impassive manner. I see now more clearly than ever before the magnitude of the problem. I see now more clearly than ever before the magnitude of the mistakes that were made, my own included among the number. In the federal administration of the law the mistakes which were made in many cases were tragic in character. Chief among these was the successful attempt to change the law itself by executive edict. The federal law placed within the Bureau of Chemistry the province of determining what foods or drugs were misbranded or adulterated. It placed upon the courts the responsibility of determining whether or not the decisions of the Bureau of Chemistry were just and legal. I imagine that some of the decisions of the Bureau of Chemistry, while I was its chief, were not particularly acceptable to certain manufacturers and dealers. Without appealing to the courts for protection, as the law provided, they sought it in executive clemency. The first great victory which was obtained by this body of men was the appointment of a referee board of consulting scientific experts to review the decisions of the Bureau of Chemistry. The activities of this board were the subject of a congressional inquiry which resulted in the unanimous opinion of the congressional committee in the following words:

"The functions of this board as at present constituted are purely advisory. Their decisions have no legal or binding effect upon anybody. The Secretary can follow or ignore their recommendations as he sees fit. The honorable Secretary of Agriculture seems to have regarded the findings of this board as conclusive in all cases over the opinions and findings of the Bureau of Chemistry, the tribunal which by express terms of statute is vested with authority to determine the questions of adulteration and misbranding within the meaning of the act."

Unfortunately although this board has ceased to exist its evil deeds live after it. The opinion of the Bureau of Chemistry that benzoate of soda was an adulteration and therefore it should be excluded from food products was reversed by this board. Since that day up to the present time the officials of three separate administrations have refused to bring any action in any court against the use of benzoate of soda in foods. The State of Indiana on its own account brought such an action before the federal court and the attitude of the state was sustained. The decision was appealed to the circuit court and the decision of the lower court was affirmed. The case was then carried to the Supreme Court of the United States where apparently it was "lost in the shuffle," as the case was dismissed by agreement between the officials of the State of Indiana and the parties having brought the original suit. The State of Wisconsin was more fortunate. It prosecuted its claim to keep benzoate of soda out of the state through the lower courts and through the Supreme Court of the United States. This court has recently sustained the attitude of the State of Wisconsin. Thus in so far as the legal status is concerned benzoate of soda in foods is outlawed, but in so far as the officials of the United States are concerned, they continue their attitude of support of this adulteration. To my mind, this amounts almost to contempt of court. Probably we shall have to wait until another administration before the mandates of the Supreme Court are carried into effect. Naturally in the conditions noted above there would not be many prosecutions under the Food and Drugs Act on account of the addition of deleterious substances to foods. In a review of the activities under the Food and Drugs Act by the Department of Agriculture under date of May 11, 1919, is found the following statement which justifies the above opinion:

"The cases in which it was charged that ingredients harmful to health had been deliberately added to foods are few in number. The Federal Food and Drugs Act specifically prohibits the addition of such ingredients to food products. The use of harmful preservatives is unnecessary and few manufacturers care to risk prosecution or injury to the reputation of their product by adding substances held to be harmful to health. Harmful ingredients in food are usually acquired by the

development of harmful bacteria from contamination, or harmful ingredients accidentally acquired during the process of manufacture, as, for instance, zinc, copper and arsenic from utensils or materials used in the manufacture of gelatine."

The question of "What is Whisky?" which was once an acute question in Kentucky had a similar career. The definition of the Bureau of Chemistry as formulated when I was chief of that Bureau made a clear cut discrimination between the real whisky and the rectified article. This decision of the Bureau of Chemistry was contested by the rectifiers in eight separate federal courts and particularly in Cincinnati, Covington and Peoria. In all eight cases the definition of the Bureau of Chemistry was sustained. Then came a change of administration. The executive authority was invoked by the rectifiers and in spite of the opinions of eight separate federal judges the definition of the Bureau of Chemistry were overruled and the Commissioner of Internal Revenue was ordered to adopt the contention of the rectifiers in direct contempt of court. Shortly after this extraordinary action was taken I met at a public function the late Justice Harlan of the Supreme Court, one of the most distinguished citizens of Kentucky. He said to me, "Come over here, my boy, I would like to talk with you." Seeking a quiet sofa outside of the assembly hall, we sat down together. He said to me, "What is this I hear about holding Supreme Court in the White House?" I replied, "Mr. Justice, you know as much about it as I do. You have read the newspapers." "Tut, tut," he said. "It is a pretty pass this country is coming to. The whisky case was on its way to my court, where it belongs, and now we shall never have a chance to consider it." Justice Harlan saw clearly the whole crux of the situation. It was not the law which was at fault but its administration. What we need now is not a new law on the Federal Statute book, but a new set of administrators. We want men who will free the law from the paralysis and hamstringing to which it has been subjected. It is too late to do the whisky question justice. What John Barleycorn needs just now is not a court decision but an inquest. He does not need the Supreme Court as much as he needs the coroner. The other rights which have been suppressed by executive order in the law are still capable of resuscitation. The law is not dead, it slumbereth. How long shall we have to wait for the reveille?

Umbilical Hernia.—Montoya discusses umbilical hernia in children, saying that it is more common than inguinal hernia but, owing to the tendency to a spontaneous cure, it seldom reaches the surgeon. He has operated in thirty-two cases in the last six years. He found in one cadaver that the intestines had formed a hernia into the cord at birth; in such a case the bowel should be reduced at once and the cord ligated. For ordinary umbilical hernia, after reducing the hernia, he straps two-thirds of the abdominal wall with adhesive plaster, first taking up a fold the entire thickness of the wall, with the umbilicus and hernia in the depths of the fold. The adhesive plaster holds the fold firm, allowing the ring a chance to heal. The plaster is renewed by the physician himself every week or two; the child can be bathed as usual in the interim. This method obviates any danger of streaching the ring, which is liable when a small pad is used. He adds that these mechanical measures have to be long kept up; a year is none too long, provided the ring and the hernia show no tendency to grow larger. With careless or negligent parents and when the hernia is exceptionally large, operative measures are preferable and he reviews the various technics available. He applied Mayo's method in eight cases, including one in which the girl of 7 had a return of the hernia six months after it had been treated by merely resecting the ring and freshening the edges of the muscle. He never uses general anesthesia for it in young children; the operation is completed in about six minutes. He gave the older children a few whiffs of ethyl chlorid to supplement the local anesthetic.

The Schick Reaction.—De Elizalde applied the Schick test to 673 children in an asylum and to 221 in a children's hospital and compares the findings with those reported by Kolmer and others in American Medical Journal. He classifies the reaction by ages, commenting on the negative reaction in very young infants as evidently due to the infants' sharing the mothers' immunity. This transmitted immunity is gradually lost, so that by the age of 3 the maximum of reaction is obtained. After 3, natural immunity is acquired so that only from 5 to 15 per cent. of adults give a positive response to the Schick test. The reliability of the test is confirmed by the experience that in the whooping-cough ward 15 of the children gave a positive reaction and the other 23 showed no response. Diphtheria was imported into the ward but only 5 of the children contracted it and these were all in the positive group. His experiences confirm the harmlessness of the Schick test, and also the absolute independence of the reaction from the condition of the general health. The presence of other acute or chronic infectious diseases does not seem to modify the reaction.

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NEXT MEETING, ASHLAND, KENTUCKY.
September 23, 24, 25, 1919.

COUNTY SOCIETY REPORTS

Allen—The Allen County Medical Society met at the Court House in Scottsville, on the 31st day of May, 1919, for the purpose of reorganization. The following members were present. Drs. J. E. Pace, W. H. Harris, W. E. Willoughby, C. A. Calvert, G. R. Keen, P. G. Graves, Lottie Graves and H. M. Meredith. The meeting was called to order by the President, A. O. Miller, who stated the purpose of the meeting, after which the society proceeded to the election of officers, which are as follows:

President, A. O. Miller, Petroleum; Vice President, W. E. Willoughby, Scottsville; Secretary-Treasurer, C. A. Calvert, Scottsville; Board of Censors, J. E. Pace, Scottsville, to serve one year; G. R. Keen, Scottsville, to serve two years; Lattie Graves, Scottsville, to serve three years.

The local dues for the year were fixed at $1.00 for each member. The Secretary was instructed to continue the payment of the dues of the members of the society who were yet in the medical service of the Government.

After a discussion of the subject of fees, a committee was appointed to draft a new schedule of fees. After which there being no further business before the society, it was adjourned.

C. A. CALVERT, Secretary.

Daviess—The Daviess County Medical Society passed the following resolutions on the death of their beloved member, Dr. J. A. Woolfolk:

Whereas: In the order of life and death, we have lost our friend and colleague, Dr. Junius A. Woolfolk, and

Whereas: His ability, his professional loyalty, his devotion to duty and sympathetic service to the poor have endeared him alike to the people and our profession, and that in appreciation of these noble qualities, we place on the records of this society our testimony to his faithfulness and ability.

Resolved: That we mourn his loss as a physician, cut down while in active work for the cause of science and humanity, and that we attend his funeral in a body.

Resolved: That this county has lost one of its most eminent and esteemed citizens and our profession one of its most conscientious and capable members, and that we share with the family and community a common and sincere sorrow in his death.

Resolved: That a copy of this be made a record, and a copy be sent to the bereaved family.

D. M. GRIFFITH,
E. B. McCORMICK,
J. M. STUART,
Committee.

Harrison—The regular monthly meeting of the Harrison County Medical Society was held at the Elks' Club Rooms, June 9, 1919. Members present were: Drs. Weyles, Swinford, Best, McDowell, Petty, Rees, Mussleman, Wells, Martin Thompson, Carr, Morgan, Midden, W. B. Moore, Smizer, Beckett, N. W. Moore, Stewart and Righter. Dr. C. M. Paul, of Cincinnati, J. W. Scott, and Wilson, of Lexington, and Stevenson, of Augusta, were guests of the society. J. W. Wells presided. Minutes of the last meeting were approved as read.

W. H. Carr reported eight obstetric cases in which hemorrhage occurred.

J. M. Reis and **N. W. Moore** made a supplementary report on case reported last meeting.

J. F. Morgan was elected to membership having transferred from Fleming county society.

At this point the regular program was abandoned and the meeting turned over to the returned soldiers present.

C. M. Paul spoke of his experiences and conclusions of military methods of handling casuals in France. He related many interesting experiences in treating the wounded, many times under distressing disadvantages.

— — **Wilson** and — — **Stevens** who were brigaded with the British armies, related many interesting experiences.

J. W. Scott, Weylie, Beckett and **Morgan** followed with talks that were very much enjoyed.

Meeting adjourned to the billiard room where an elegant lunch was served.

I wish we could have had a representative from every county society in the State attend one of these meetings and see how we do it in Harrison.

W. B. MOORE, Secretary.

Knox—The Knox County Medical Society met with Dr. Logan at 10:30 a. m. May 26, with the following members present: J. W. Parker, G. H. Albright, F. R. Burton, Wm. Burnside, L. Logan, C. L. Heath.

L. Logan gave a very interesting talk on "Why We Should Be More Fraternal," which was discussed by the other members present.

The indications are good for a revival of our Society, there has been more interest of late than for a long time.

The Society adjourned to meet June 23rd, when we hope to be able to report a still better meeting.

CHAS. L. HEATH, Secretary.

Shelby—The meeting of the Shelby County Medical Society was called to order at 11:30 a. m. by the Secretary. This being the first meeting for nearly two years it was devoted to business and hearing a very able address by our Councilor, Dr. C. Z. And. There were very few members present and it is to be regretted very much, because Dr. And gave us some very wholesome advice and counsel. We were glad to have him with us.

The following officers were elected:

President, T. J. McMury; Vice President, G. Laurence; Secretary-Treasurer, S. L. Beard; Delegate to Ashland Meeting, G. Laurence, with the Secretary as Alternate.

Felix Dale of Shelbyville, was elected to membership in the society.

All of the Shelby County physicians who were in the service of the U. S. Army, have returned except W. H. Hart, who is with the Army of Occupation in Germany.

The society fixed the 2nd Thursday in each month for regular meetings.

S. L. BEARD, Secretary.

Syphilis of the Nervous System.—Campo remarks that he often encounters persons who are victims of tabes or other syphilitic affections of the central nervous system who yet had taken supposedly thorough treatment according to the older methods. The action of the syphilis virus is sometimes reenforced by certain predisposing factors such as an inherited taint, fatigue of the brain and spinal cord, pre-existing intoxications, traumatism and cold. These predisposing causes explain why nervous syphilis is more apt to develop between 20 and 40, is more frequent in men than in women, and is more prevalent in the city than in the country. The evidence on hand seems to indicate that the nervous system becomes infected during the secondary period. A mild meningitis may exist for years without making itself manifest, but it may induce infiltration in the meninges close to the posterior roots, and this may entail the clinical picture of tabes from the degeneration which follows the compression of the roots. He reviews the clinical picture of cerebral syphilis, and outlines our knowledge on the subject.

Racemose Phlebosarcoma.—Van Ree's patient was an otherwise healthy woman of 42; the sarcoma in the leg resembled in every respect a group of thrombosed varicose veins. The woman had noticed for some years a small bunch on the inside of her left leg, but for a long time there was no pain. The conglomerate of what looked like thrombosed veins was finally reseeted, but the contents proved to be sarcomatous, and the leg was amputated. There has been no sign of recurrence during the fifteen months to date. Illustrations are given of this peculiar racemose spindle-cell sarcoma, evidently starting in the intima of the vein, and the case is compared with the few other cases on record of cancer starting in a blood vessel.

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EDITORIAL

IMPORTANT CHANGE OF ADDRESS.

It is important for every doctor to note that the State Board of Health has removed all of its offices to the corner of Sixth and Main Streets, Louisville, Kentucky. Mail addressed to Bowling Green will be delayed in reaching the office. The offices of the Kentucky State Medical Association and the KENTUCKY MEDICAL JOURNAL will also be located in the same building in Louisville, but the JOURNAL will be printed and its business office will remain in Bowling Green. All of the officers and employes of the State Board of Health and the State Association may be reached by mail or telephone in Louisville. The telephone numbers are Cumberland, Main 3321; Home, City 3321.

The State Health Laboratories will be located at Lexington. All specimens for food and drug and all water analyses and all Wassermann examinations should be mailed there. Specimens for bacteriologic examination may be sent either to Post Office Box 23, Louisville, or to the State Health Laboratories, Lexington, and they will receive prompt attention at either address. Addressed containers will be furnished from either laboratory. The Louisville laboratory will be in charge of Dr. Lillian H. South, and the bacteriologic section of the Lexington laboratory will be in charge of Dr. W. R. Plimell. All the Wassermann examinations will be made in Lexington, and franked containers not requiring postage will be sent to any physician who requests them.

We realize fully that there will be some confusion in these matters for a few weeks, but the profession and people will soon realize the increased efficiency that the Board and the Association will be able to give because of the better facilities, and the splendid new building which we are occupying.

The Health and Medical Building at Sixth and Main Streets will be the best quarters occupied by any State Board of Health in the United States, and in a peculiar way they will be the property of the medical profession of the State and the JOURNAL hopes that every doctor who is in Louisville will come in and inspect the new plant. There will be a special office fitted for visiting physicians and it is suggested that they make their engagements to meet business or other friends at the building, which is just opposite the Old Inn.

ASHLAND PROGRAM.

The Kentucky State Medical Association meets this year at Ashland, September 23rd to 25th, inclusive. This announcement was made last month and all of our members who desired to do so were requested to write the Secretary the topics they would prefer discussing before the scientific sessions. At the time of writing this editorial eight replies have been received.

If the members of the profession desire to make the Ashland meeting a success they must prepare interesting and effective papers to lead the scientific discussions. Everything promises a great attendance. The program will be completed within ten days after this issue reaches your hands. Unless the Secretary hears from you, it will be taken for granted that you do not desire to present a paper at this great Victory meeting.

THE A. M. A. MEETING.

The Victory meeting of the American Medical Association in Atlantic City was a most successful one in almost every way. The attendance was large. The scientific program was most interesting. The commercial exhibits were as varied and interesting as usual. The scientific exhibits were of unusual value, but badly arranged and too much of their usefulness lost by the failure to locate them compactly and conveniently. The medical corps of the Army and Navy had especially prepared noteworthy exhibits which showed in

great detail the remarkable advances made by both branches of the Service in the great war.

The proceedings of the House of Delegates were dry and uninteresting. They have become stereotyped, almost as much so as the well-planned mid-winter sessions engineered by the Councils in Chicago. The report of the Trustees indicated gratifying progress in the Association's business management. That of the Council of Health and Public Instruction indicated a statesmanlike grasp of many of the problems which the medical profession must solve if they are to be solved wisely for the people. The wise attempt of the Speaker of the House, Dr. Hubert Work, to inject some life and action into the proceedings met with flat failure. One of the greatest of our medical statesmen, Dr. Work, is a veteran in the affairs of the Association and realizes, as few of even the most active of its members have shown any evidence of doing, that under the guidance of a small and sinister clique, the authority and usefulness of the House of Delegates have been, *pari passu,* minimized, while the Trustees and Councils, guided mainly by men of integrity but of restricted vision, have done and controlled practically everything done by or in the name of the Association. The Presidency has been stripped of everything but the empty honor of an annual address and the really great men honored with this position in recent years have all remarked the hopeless handicap of an organization so perfected that it is maintained by its own momentum and no longer is showing the initiative and aggressiveness essential to constructive leadership by the greatest organized medical body in the world.

It is important that every reader understands that these criticisms are intended to be suggestive and constructive. The American Medical Association and the medical profession are all right, but their individual members and the local and State organizations must awaken to the many real responsibilities and duties which confront them, and must take the positive action which is necessary to prevent inimical interests from controlling situations which must be controlled for the interest of all the people by the profession.

The Association only seems to lack soul. It is simply latent. The democratic instincts of the profession must and will assert themselves. That they wish to was indicated by he election at this Victory meeting of Dr. William C. Braisted, the distinguished Surgeon-General of the Navy, as President. Dr. Braisted's management of the medical and sanitary affairs of the Navy during the war has shown clearly that he is one of the really great medical men of the world, and in honoring him the profession has really honored itself. The reorganization of the Board of Trustees, begun last year when Dr. Frank Billings became its premier, by the election of Dr. Phillip Marvel as Chairman, was another most interesting development. Dr. Marvel is one of the veterans of the Board, but has always been squarely and constructively progressive. The profession and its Association are confronted with great and intricate problems. The entire membership must be awakened to their responsibility in all of them.

The profession of Kentucky can take much comfort from the quiet, but wise and efficient course of its delegates, guided by our mentor and friend, Dr. L. S. McMurtry. This great diplomat, our senior and our greatest surgeon, has been honored by the profession of the State and Nation with all of their gifts, but unspoiled by honors and guided by an unusual experience both with affairs and men, has constantly added luster to the reputation of Kentucky.

It is a pleasure in this contemporary note of progress to express to him the affection and confidence of the medical profession of the State which he honors.

OUR ADVERTISERS.

The JOURNAL hopes that every one of its readers realizes that it could not be published at all were it not for the support of our advertisers. It is also important to remember that these advertisers are carefully selected from a very large number of applicants. For instance, no sanitarium is advertised in the JOURNAL unless its management is endorsed by the County Society of the County in which it is located. Of course, no Pharmaceuticals are accepted unless they have been approved by the Council on Pharmacy and Chemistry. So certain are we of our methods of investigation of our advertisers, that the Association stands squarely behind every advertisement which appears in the Journal. If you have any complaint to make in regard to any financial dealing with an advertiser, take it up with us, and we will see that you are compensated for your loss immediately. This is the only publication in the world, so far as we know, which makes this statement.

It is equally important that the profession of Kentucky understand that the advertisements in the JOURNAL which come from outside of Kentucky, are practically all secured through the Cooperative Medical Advertising Bureau which was inaugurated several years ago by the American Medical Association, and

which is conducted under its auspices. Under the live, active management of Messrs. Braun and Matson this Bureau has become one of the largest medical advertising agencies in the world. It handles only clean, straight advertising.

The profession of Kentucky is grateful to our advertisers, as it is to those who patronize them. It is also grateful to the American Medical Association for all the help they give us in making our JOURNAL a better one for our members.

SCIENTIFIC EDITORIALS

OPHTHALMOLOGY AND OTOLOGY AT THE A. M. A. MEETING.

The Seventieth Annual Meeting of the American Medical Association held at Atlantic City, June 9th to 13th, was worthy of its name "Victory Session" for it was eminently successful from every standpoint. In point of attendance it exceeded the registration of the last meeting held at Atlantic City in 1914, by several hundred. The association bulletin records a total of 4802 registrations up to 4 o'clock of the day before the closing, which practically assured an attendance of over 5000. The section meetings were all well attended and numbered among the participants many men now in military service, among them Surgeon General Merritt Ireland. The bulletin informs us that Maj. S. M. Strong, M. C., and Capt. Timberman made the journey from Callstrom Field, Arcadia, Florida, by aeroplane to attend this session.

Among the scientific exhibits the ones of the Medical department of the U. S. Army and Navy attracted especial attention. They covered all phases of the work which has put the medical department of the Army and Navy on the high standard they enjoy. The moving picture exhibits were also of especial interest bringing to the profession and the public many phases of public health service. It is of interest to note that appreciation of the services rendered by the medical department of the Navy was manifested in the election of Admiral Wm. C. Braisted, Surgeon General U. S. Navy to the presidency of the A. M. A. It was voted that the next annual session of the association be held at New Orleans.

The section on ophthalmology which has always been one of the best working sections of the association, while not quite up to the usual mark in attendance was unusually successful from a scientific standpoint. In our endeavor to accomplish big things and to present unusual conditions the elements of medicine are so often overlooked. Not so with the eye section this year which devoted an entire day to the A. B. C. of ophthalmology. Interesting papers on refraction, muscle anomalies and the relation of ophthalmology to general medicine being considered. In this symposium Dr. Charles P. Emerson, of Indianapolis, considered the subject of headaches and other psychical reactions from the standpoint of the internist. The relation of focal infection to eye condition also received its shore of attention.

Perhaps the most interesting and instrutive papers were those presented by the members of the section who had seen active service in France, relating to the organization and activities of the ophthalmic service of the American Expeditionary Forces. Much commendation was handed out to these men, especially to Dr. Allen Greenwood of Boston who was chief consultant ophthalmologist to the A. E. F., and to his assistants, Dr. Geo. S. Derby, of Boston, and Dr. Nelson M. Black, of Milwaukee.

Dr. Greenwood was given an ovation and was unanimously chosen chairman of the section for the ensuing year.

ADOLPH O. PFINGST.

OTOLOGY AND LARYNGOLOGY AT THE A. M. A.

The section on Otology and Laryngology was more largely attended than usual and most interesting papers were read on the various complications following operative procedures, especially the mastoid. The sinuses also were given their share of attention and the question of focal infections largely dealt with. In addition to the sinuses which of course were included as focal areas, the teeth, tonsil and alimentary tract were considered very largely as factors.

In this section both the French and English Governments were represented. Sir St. Clair Thompson, of London, was given a chair of honor and participated to a large extent in the discussions of many papers.

This section considered individually, to the surprise of many, the daylight saving law and went on record against the repeal. It was the consensus of opinion that daylight living has contributed immeasurably to the happiness, health and well being of the American people.

Several new instruments were exhibited, but these in the main were tonsil instruments. Several appeared to be improvements over the ones on the market and others appeared to be very cumbersome.

In this section due appreciation of the valient work done by the medical profession in

the World War was not lacking and Dr. Joseph Beck of Chicago, was unanimously chosen chairman for the coming year.

C. T. Wolfe.

OFFICIAL ANNOUNCEMENTS

IMPORTANT NARCOTIC LAW DECISION.

Revoking T. D. 2200, dated May 11, 1915, relating to the quantity of narcotic drugs that may be dispensed or prescribed by physicians, dentists, and veterinary surgeons registered under the provisions of the Act of December 17, 1914.

Treasury Department—Office of Commissioner of Internal Revenue, Washington, D. C.—To the Collectors of Internal Revenue and others Concerned: The ruling contained in T. D. 2200 of May 11, 1915 permitting a practitioner to dispense or prescribe narcotic drugs in a quantity more than is necessary to meet the immediate needs of a patient is hereby revoked and the revocation shall be applicable in all cases whether a decreasing dosage is indicated or not.

The Act of December 17, 1914, as amended by the Act of February 24, 1919, permits the furnishing of narcotic drugs by means of prescriptions issued by a practitioner for legitimate medical uses, but the Supreme Court has held that an order for morphine issued to an habitual user thereof, not in the course of professional treatment in an attempted cure of the habit, but for the purpose of providing the user with morphine sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning and intent of the Act. U. S. vs. Doremus, No. 367, October Term 1918, T. D. 2809.

In view of this decision, the writer of such an order, the druggist who fills it and a person obtaining drugs thereunder, will all be regarded as guilty of violating the law.

Daniel C. Roper,
Commissioner of Internal Revenue.

Approved: July 2, 1919.
L. S. Rowe,
Acting Secretary of the Treasury.

It is important for every physician to understand that he is liable to be sent to a Federal Penetentiary if he furnishes morphine or cocaine to habitues.

ORIGINAL ARTICLES

THE POSSIBILITIES OF ANTI-VENEREAL WORK.*

Major Geo. H. Day, M. C., U. S. Army.
Louisville.

It is agreed, that the venereal campaign in the army was successful, then how much of that plan can be utilized in civil life, to the end that venereal diseases may be understood my the laity and successfully treated by the profession. There can be no denial of the fact that public opinion will not and cannot be denied. Do you suppose that the fight for prohibition would have ever been successful but for public opinion. Would our country strong and mighty as it is, have entered into the war but for public opinion. Of what is the average office holder most afraid and to whom must he account for his stewardship? Public opinion. Public opinion can have anything, do just what it chooses and is the only one thing that moves surely and steadily towards its end, sweeping all before it like a glacier

When the public finds that venereal diseases are destroying thousands of our people every year; that it causes more deaths than any other disease, with the exception of tuberculosis, pneumonia and cancer; that 250,000 are estimated to have died from this cause in 1916; when it is understood that about 12% of our army was infected and that the rate of infection was six times greater than all the combined communicable diseases then will public opinion come into its own and surely demand a solution to the problem.

Why this large percentage in the army and to what are we indebted for this very astontounding array of physically unfit? We have not gone into moral decay, neither is there more venereal disease among us, but at the time of the existing emergency for the first time an effort was made to discover the venereal soldier and when found, he was given the benefit of modern scientific treatment to the end that he would cease being a menace to others and be restored to full duty in the shortest time possible able to do his bit in the winning of the war.

To apply the plan of the army in handling this question in civil life is of course quite impossible, but there are many points that could be adopted successfully. For a better understanding of the army plan, it might be of interest to mention the military attitude

*Read before the Eighth Annual State Conference or School of County and City Health Officers, Louisville, May 12-15, 1919.

toward venereal diseases and what steps are taken to protect the soldier.

Primarily, the recruit is taught that an infected man is depriving the government of his services and that it is the results of his own misconduct and under certain conditions is punishable by either court martial or loss of pay or both. He is told that to expose himself is dangerous and that its results may be permanent and also that the lives of innocent women and children may be jeopardized. He is taught by lectures, films, reading matter and clinical illustration that to allow himself to be exposed is unsoldierly and unpatriotic and is the most serious factor to which our men are subjected.

Your soldier is encouraged to lead a virtuous life and to abstain from exposing himself not because of the moral code, but because it is dangerous. If, in spite of this he should be exposed, he is taught how to prevent infection and in addition certain places are provided where prophylactic treatment is extended. Should he be exposed and not report for prophylactic treatment and later should be infected, he is then liable to trial by court martial and severe punishment be inflicted. In the event that the prophylactic treatment was taken and if in spite of all precautions an infection should occur, then he will lose his pay for the period of disability.

What would prevent a soldier from hiding his condition? At interval of every two weeks, each soldier is subjected to a physical examination for this very purpose and it is quite impossible for a venereal to dodge the infection with any degree of success. As a result of this propaganda, the acute infections are remarkably low, totaling about one-sixth of the whole. It is the chronic cases or those that were brought into the army from civil life that constitutes the mass of infection and this was the picture that awakened us to a realization of the real facts in the tremendous number of venereals wandering our streets unmolested and many times untreated, because of their ignorance in not knowing of the seriousness of their conditions.

What was the greatest factor in eliminating acute infections from the army? Education in sexual hygiene and the removal of the sources of infection. It was found that if a systematic effort was made, the names of the women could be obtained, segregated and treated, thereby eliminating a constant menace. In studies developed from active association with the military, it occurred to the writer that unquestionably there should be a coordination of all interested agencies in this campaign of control, segregation and treatment. This organization which developed was known as the "Council for Combatting Venereal Diseases" and was composed of every organization which might be interested in every phase of this question. When this body began its campaign, it was quickly observed that success could not be denied, as the influence and power invested were so great that it was quite impossible for any one or anything interested in commercialized vice to expect any degree of success once this body began to functionate. Represented in the Council were the following organizations:

1. City, County, State and Federal officials.
2. Camp Surgeons and Camp Venereal officer.
3. Chamber of Commerce.
4. Commission on Training Camp Activities.
5. Division of Social Hygiene Section on Women's Work.
6. Red Cross.
7. Y. M. C. A. and Y. W. C. A.
8. County Medical and Dental Societies.
9. Public Health Service.
10. Department of Law Enforcement S. G. O.
11. Civic, Club and Religious organizations.
12. Press.

Again you will ask how much of this plan which met with pronounced success, can be applied to this State.

On first thought, it assumed that owing to the lack of military restrictions that any plan looking towards a venereal survey in this community would be impracticable, impossible and certainly destined to failure. The fact remains, however, that aside from prophylaxis, inspection and G. O. 45, the entire plan could be utilized and if we agree that prophylaxis and inspection are both unnecessary in this instance, because if the public is instructed as to the dangers incident to infection, either one of two things are sure to occur, abstinence through fear of the consequences or if exposed receiving the protection of a properly instituted prophylactic. A modification of G. O. 45 could be incorporated in the local laws in which men and women known to be infected, could be forced to undergo treatment in the event that such treatment was not at that time being taken.

Our experience in the army with many thousands of cases leads me to believe that insofar as civil life is concerned we have not as yet found a solution to the problem. It is my belief that we will not be successful until we have a standardized plan of reporting cases. Where each state will adopt and c...

force a sensible plan which to be efficient must be practical and at the same time be safe guarded from isms, quacking and radicalism. Positively removed from politics and well meaning reformers. It is a question of considerable moment, one that has proven a riddle in many ways. Authorities differ as to a solution and when practical, experienced experts disagree surely others cannot hope for immediate success in formulating a plan.

We must know that a considerable proportion of prostitutes are mentally deficient and if it is agreed that this is true surely treatment other than quarantine and attention to local symptoms are in order. Many times through misfortune, disease, environment, heredity and other known causes, innumerable symptoms are observed which if recognized and successfully treated will restore many of these women to society.

It is not the purpose of the writer to offer a plan at this time, for the control of the venereal problem. In my opinion too many factors at present interfere with a proper function of the statute now on the book. We as physicians must first put our house in order as we must assume a tremendous obligation when we undertake to treat these conditions. Our responsibility does not cease with the completion of the cure. You, enjoying the confidence of your patients, are placed in an ideal position to give the public the benefit of your information as to the seriousness and consequences of venereal infection. It should be our endeavor to inform ourselves on the latest methods in the treatment and control. We should avail ourselves of the printed matter furnished by the Public Health Service and in turn when the opportunity presents, give this literature to those of our patients that are interested. We should also avail ourselves of the laboratory facilities offered us by the county, state and private laboratories in that a diagnosis shall always be substantiated before treatment is instituted.

The time is rapidly approaching when in addition to a standardized treatment, we will have also a standard method of reporting, for segregation and control. Make no mistake about this. Public opinion will demand its rights and what it demands, that will it receive. The army demobilized will have a further effect from education, prophylaxis and treatment. For your information interview any soldier; ask him what he knows of these questions and whether or not it is worth while.

The era of prudery and Puritanism has gone forever. In its place we may expect a new epoch making period where ignorance will not be bliss; where every parent will assume the obligation of instructing his child on these questions of sexual hygiene; where instead of speaking of such questions in whispers behind closed doors, we will have frank, honest, before-the-world conversation to the end that the future generation may at least be given a square deal and those now among us may be spared hours of needless suffering and be given the opportunity of availing themselves of the very best that medicine and surgery has to offer.

THE FUNCTIONS OF THE STATE DRUG INSPECTOR.*

By C. S. Porter, State Drug Inspector
Lexington.

Receiving notice from our worthy secretary that he had "put me down" for a paper on the above subject, to be read before this honorable body, I concluded that the best way to place this work before you would be to give a resume of the work which the drug inspectors has accomplished.

The work which appeared of first importance to the present inspector, when he began his duties, was pharmaceutical preparations such as aqueus solutions, elixirs, tinctures, syrups, spirits, tablets, etc. Samples of these lines, as made by the various manufacturing pharmacists whose products were found on the Kentucky market, as well as those made by the retail druggists themselves, were collected and turned into the drug laboratory for analysis. The results showed the need for this work. Some of those made by manufacturing pharmacists, as well as many from the hands of retail druggists proved to be substandard, while a few were above standard. Except in a few cases, these variations were not of such a character as to indicate intentional violations or cases of fraud. Rather the results indicated careless or inaccurate methods in preparing these various preparations.

The work then became constructive in an effort to correct these evils. It was supposed that some of the trouble in the retail stores might arise from faulty weights and graduates. The inspector was supplied with a set of standardized weights and graduates both meteric and apothecary. He then visited 89 towns and 469 drug stores, testing scales, balances, weights and graduates. The fol-

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lowing summary will indicate the results of this work:

	No. Tested	No. Found Incorrect	Per Cent Found Incorrect
Scales and balances	891	104	11.67
Avoirdupois weights	2138	64	.03
Apothecary weights	6136	2051	33.43
Metric weights	2270	59	2.60
Graduates, wine measure	2745	66	2.40
Graduates, metric	1921	54	2.81

The druggists cheerfully cooperated in this work being glad to have this check on their equipment. Those needing them promptly supplied themselves with new balances, weights and graduates. Those who continued to manufacture their own pharmaceuticals adopted more accurate methods, while many for lack of time or other reasons, adopted the system of buying from well known manufactures all pharmaceutical preparations, and the deficiencies were corrected.

Filled capsules, pills, tablets, etc., were sampled and tested by the drug chemist. Here again the results indicated the need for more accuracy. Such manufacturers as were found to be supplying these articles, inaccurately prepared, were warned, and in most cases subsequent inspections of their products indicated that they adopted improved methods. In addition to this constructive work it was found necessary to prosecute in some cases. The total number of prosecutions was 171. The net results of all this work has been to improve the character of the drug stocks marketed by the retail druggists of the State until now we believe that these stocks, as a rule, are composed of as good quality of drugs chemicals and pharmaceuticals as the country affords.

The inspector's work among drug stores at present consists in carefully looking over the stocks for new or unknown brands of chemicals and pharmaceuticals, taking samples of such for analysis. That the faker and the man who is mean enough to adulterate medicines are still abiding in the land is proven by the following:

In recent work the inspectors had collected two samples of Aspirin tablets, each tablet labeled "five grain tablets," which the chemist found to contain only about 4.5 grains, while a remedy sold under one name as a gonorrhea cure, and another name as a pile remedy, was found to be virtually the same thing and composed largely of crude petroleum. A federal inspector recently seized in this State, 42 boxes of 100 capsules each, of santal oil, 10 minims, and 20 boxes of 100 capsules each, salol and santal oil, both of which were badly adulterated, cottonseed oil being largely substituted for the very expensive santal oil. Your state inspector has found in another part of the State two boxes of the same which he disposed of.

These findings indicate the necessity for vigilance in watching the drug markets of the State. As to patent medicines, some work has been done along this line in former years, and recently at the suggestion of the Secretary, we have collected some 15 or 20 samples which are now in the possession of the drug chemist for analysis.

The pure food and drug law was amended by the last legislature so as to read as follows:

"It shall be the duty of the State Board of Health to make or cause to be made, examinations of samples of food and drugs manufactured or on sale or dispensed in Kentucky at such time and place and to such extent as it may determine."

This places the physician who dispenses medicine in the same attitude to the law as the druggist. With the approval of the Secretary and the State Board of Health the drug inspector will soon include this in his regular work, and visit physicians' offices and take samples of their supplies. As is well known, there are pharmaceutical houses that sell only to physicians. Their products are not found in drug stores, and hence have not been investigated. We believe it is important to do so, that the physician may have some check on his supplies and not be compelled to take them altogether on faith in the maker of same.

There are two suggestions that I would make to physicians who buy direct from jobbers or manufacturers: First, insist that each invoice has written or printed on it, a guarantee that the goods purchased comply with the pure food and drug law. The Kentucky statute explicitly exempts the purchaser of goods so guaranteed from the penalties of the law. The second is that you purchase only from such manufacturers as assay and standardize their goods before placing them on the market. The manufacturer who does not do this does not incure a considerable expense, which must be added to the costs of his goods, and is unable to sell them cheaper; but no pharmacist can make pharmaceuticals that he can be sure are of standard strength, or of strength indicated by the label, unless he standardizes them. The cheapest is not always the best, and frequently is not even good.

Bullet in Parietal Lobe.—Albo relates that the hemiparesis and dysathia subsided after removal of the bullet from the left parietal lobe under roentgen control. The case is illustrated.

THE FUNCTIONS OF THE STATE FOOD INSPECTOR.*

By John W. McFarlin, State Food Inspector Bowling Green.

The duties are to visit every place where foods and drinks are manufactured or sold. The object is to see under what conditions they are made and the kinds of materials used. The law provides that all conditions must be good and sanitary and that all materials used must be pure and wholesome.

I am asked to tell you exactly what I am doing and how you gentlemen can help me.

Experience is the only teacher in this work. We cannot read and learn to do it, nor can we talk and learn it, but we must go and do it. It requires knowledge not only of one thing, but everything in foods and drinks. It requires tact and much patience, sometimes; for there are those in business who do not care to have their places of business inspected.

Upon entering a grocery store, I make a general survey of the place as to sanitary conditions, methods of handling, and a careful examination of the stock. I frequently buy a sample for analysis. I suggest the beneficial improvements which I have seen in other groceries—frequently they are adopted. The general condition of groceries is greatly improved.

The meat market requires close attention, especially in the summer months. I examine carefully everything, in detail. Floors hooks, blocks, implements, boxes and meat; also methods. I insist for better conditions in many meat markets and facilities for washing implements with hot water, which is greatly neglected.

The rural slaughter houses are mostly small killing pens and unsanitary, having neither screens nor facilities for washing implements with hot water. I have been successful in having many of these constructed with concrete floors and screens, but they are still unsatisfactory, and the single municipal plan, properly equipped, is the only solution. I have done a lot of work along this line with some results. There should be one sanitary slaughter house in each town. Proper interest is not taken. The same applies in houses where poultry is dressed.

The bakery is very interesting. I make a careful study of the materials used, methods and equipment, the sanitary condition of storing and handling. I have collected many samples of materials from the bakeries; some were in violation and were eliminated. Proper labeling where compounds and artificial fillers were used gave a lot of trouble to the department and the bakery, but the proper spirit of cooperation has always existed and the industry greatly improved as to equipment, methods and materials. I do not think a public bakery should be permitted to operate without that one piece of machinery commonly known as a mixer. With this, there is no excuse for the dough not being clean and better. There are a lot of different materials used in the bake shops, all kinds of flours and flavors, colors, sugars, syrups, glucose, honey, malt extract, fats, oils, and diverse other things with which only practical experience in the work will properly inform the inspector. I have worked the trade for twelve years and still find rough places in my path. New materials, mixtures and compounds are continually introduced to the trade. Many of them are good—some objectionable.

The dairies seem not so good as they used to be. Like other things they are changing. I do not know the final outcome. Some are entirely out of business, others with number of cows greatly reduced, and some good and operating at full capacity. Observations during recent inspection cause me to believe that our milk supply in cities will have to come from the farmer far removed from the cities, and the modern, fully equipped dairies will be few in number. The Government score card does not seem to apply further, only in a few instances. The farm dairies have nothing much to comply with the Government score card since they do not possess but very little of dairy equipment. Most of them sell at wholesale and the creamery furnishes what should be a sterile can, the cows are milked usually in a dirty barn and the milk poured or strained into the can and delivered by truck to creamery or distributing station, where it is pasteurized, bottled and delivered to the consumer. There is entirely too much theory in the milk business. It is an injustice to the milk itself, to the producer, and to the consumer. Milk a clean cow, in a clean place, use a clean bucket, aerate the milk, put into clean can, keep cool, and deliver, and keep yourself clean while doing this, is all that is necessary. It does not seem difficult, but inspecting for year has convinced me that milk is most generally produced under unsanitary conditions, utensils not properly washed and milk not properly handled. I am now convinced that all market milk excepting certified, should be required to be properly pasteurized. The exceptions other than certified should not be accepted. Any one who differs with me has a right to, but he

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does not know anything about the milk business or he would not differ. He is a theorist and does not know the practical side. I am not in the milk business and have no interest only for the public good. I have seen enough in my continued inspections to thoroughly convince me that proper pasteurization is the only safe, practical solution. I know it, or I would not state it.

Much care and interest is necessary to inspect hotels, restaurants and boarding houses. The entire place must be looked over in detail or things of importance will be omitted. I examine kitchens, utensils, ice boxes, foods, and methods; also the service, and I suggest beneficial changes. I comment on the linens, on beds and tables, and take special pains not to omit the things *objectionable* and unacceptable. This inspection applies to every place where foods and drinks are sold to the public.

At the time the construction of Camp Taylor was begun, or possibly a little later, I was stationed here to cooperate with the city health department and the United States Public Health Service. I was assigned to the inspection of public eating places in this city. I did practically nothing else. I inspected them daily for fourteen months. I was interested; I learned how to do it by doing it. The city ordinance, the State law, and the army regulations were applied gradually and in a few months I believe that the city's public eating places were as good and clean as those of any city. Every one, with one exception, continued in business. Only a few were contrary for a little while. When the proper pressure was brought to bear, they fell in line and the cleanup was far advanced. I continued this work until about the time the armistice was signed, and since then I have been making general inspections over the State.

The county and city health officers can be of great assistance with little effort. When passing your slaughter houses and dairies stop and look at them. Just a word about the objectionable things you see, will help. Each city health officer should have the milks examined monthly. If you cannot do it at home, get a case, collect the samples and send them to the laboratory of the State Board. The same applies to waters and foods. What is the condition of your courthouse, your depot, your hotel or restaurant, and their toilet facilities? Mention the objectionable features to those in charge. It is your duty. Do not let your fresh meats be killed in filthy places, then hauled to market in a filthy wagon, uncovered and exposed to dust and flies. When you go into the meat shop to get your steaks or chops look inside the meat box, examine the blocks, saws, knives, etc., and see what facilities there are for washing same with hot water. Do not fail to see the sausage mill.

When you go into the bakery to get your bread, step back in the rear and see where it is made and baked. When walking down the street you see food products exposed and out on the pavement, ask the grocer to take them inside and protect them from dust, flies, dogs and street filth. If he is a good grocer he will do it.

My subject is too broad, my purpose is to give you a brief outline of my work and how you can help me. If I have impressed you to the extent that you will cooperate in one of the greatest works of to-day, I will be satisfied.

Our meetings are good things. Our bulletins may help some. Good lectures entertain and are beneficial, but action in the field is absolutely necessary and most effective.

THE COUNTY JAIL*.

Wm. H. Oates, Mobile, Alabama.
Major Medical Corps, U. S. A.

Publicity is not only a political antiseptic, but is the sure antidote for most, if not all, of our government ills.

The growing spirit of altruistic progress which now pervades society, has not, in any field of needed reform, manifested itself more plainly and more beneficially than in prison regeneration. Nor has there been any field in which reform was, and to some extent still is, more sorely needed. In discussing the hard ships of a sailor's life, Dr. Samuel Johnson was once moved to say to Boswell, that he could not conceive of any man who had so little intelligence as to be a sailor if he possessed sufficient ingenuity to get into jail. Had the famous doctor inspected the surroundings of many American prisons of even this date, he would, I think, have adopted some other illustration to emphasize the discomforts of a life before the mast.

I think I am not far from the truth when I say that our penal system is an anchronism,—a survival from a barbaric past. In its theory it is beautifully adapted to the end sought, but in its practical administration, it is absolutely destructive of that desired result. In theory a man convicted of crime is imprisoned, not because the State hates him, not in a spirit of revenge, or retaliation, but simply because

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he shows by committing crimes that it is not safe for others that he be allowed to mingle with them. It is not safe to allow a murderer at large, because he might take other lives; a thief must be confined because at liberty the property of others would be subject to his attack. Logically, therefore, it would follow that, if he is ever released, it must be only when those impulses which induced him to commit the crime have been corrected. Therefore, the period of imprisonment ought to be devoted to physical regeneration, intellectual development and moral instruction. Otherwise, the whole purpose of the original imprisonment is lost. Society is not entitled to protection against a thief for a term of years for which he may be sentenced only; it is entitled to be protected against him for all time. So, how futile it is to say to a man: "You are a thief; therefore, to protect others you must be put where you cannot steal; for ten years you will associate with other thieves, deprived of all the sweet, elevating influences of life, suffer indignities which will make you hate the law, and finally turned out as much an enemy of society as the law can make you."

Of course his punishment may deter some few from crime, may even, in isolated cases, work a reformation, but in the vast majority of instances, society has fashioned a more deadlier, more efficient enemy. Society can never gain anything by the humiliation and degradation of any of its members. It must gain much by the elevation and instruction of many of them. The existence of public schools and churches is a recognition of this fact. The inevitable conclusion must be that the greater the need, the greater must be the correcting influences.

If a morally good child should have instruction at the expense of the State that he may grow up a good and useful citizen, how much more effort should the State make that a mad one may also develop into a recognition of his social duties.

Under the present system, a convict is worked to produce revenue; for the time being he is an animal, a beast of burden, a slave, his moral and intellectual faculties being unexercised, atrophy and die. His physical subjection to another is calculated to destroy every vestige of self-respect, and in some respects even worse. The places in which he is confined are so unsanitary that his sentence of imprisonment is really a sentence of death. No enlightened people would tolerate a law which provided that, as a punishment for larceny, a thief should be inoculated with the germs of tuberculosis, or typhoid. A righteous indignation would sweep it from the books. And yet, in far too many cases, that is really what happens. As a punishment for crime, a man is sentenced to be confined under such circumstances and in such places that his chances of contracting fatal diseases are vastly increased. When, on such account, he does become a victim, the fact is that the law made him a consumptive as a punishment for stealing, it may be, not more than twenty-five dollars.

It is, therefore, a pressing duty which the sacred obligations of a common humanity impose upon every citizen that it must be seen to, that men who though criminals are human beings, who, more tempted perhaps, less fortunate, less strong than we, are still moved by the same emotions and suffer in the same flesh. Of each of them it may be said, no matter to what morass of life his fate has brought him, to whatsoever red guilt, as Carlyle in his incomparable story of Charlotte Corday said of Murat, "For he, too, had human affections, a brother and sisters, and was wrapped in swaddling clothes and slept safe in a cradle like any of us."

These considerations, while applicable under all circumstances, and with reference to all places in which human beings are confined for whatever purpose, press upon the mind with peculiar force in the case of the county jail. As a rule, the persons who are confined in the county jail, have not been adjudged guilty of any violation of the law. They are usually persons who are awaiting trial upon some charge for which the law does not permit bail, or who are too poor and uninfluential to procure bail. These persons are presumptively innocent, and in many cases are so declared to be by the jury to whom the question of their guilt or innocence is submitted.

If the situation to which I have alluded above are pertinent with reference to individuals who are established by a conviction to be criminals, how much more pertinent are they when applied to innocent persons who are restrained of their liberty by the strong hand of the law, and who have in reality committed no offense?

While most of those who are confined in jails are there simply for safe-keeping and awaiting trial, and therefore presumptively innocent, they have been, as a rule, housed in unclean, ill-ventilated foul-smelling structures, with no room for exercise, and scant, if any, provision for, and no incentive to, personal cleanliness, and exposed to every peril of fire and disease. Their food has been scarce, ill-prepared and ill-served, and every auxiliary with which modern science fortifies the physical constitution against the inroads of disease has been conspicuous by its absence. Nor has there been any provision whatsoever against the idleness of mind which be-

gets viciousness and is the fertile breeding ground of crime.

In my own state, Alabama, the above described regime has heretofore existed. Everything in the state seems to have grown and improved with the single exception of the jails. No additions or improvements have been made in quite a number of the jails throughout the state since they were originally built many years ago.

Absolute ignorance of the rudimary principles of ventilation and sanitation is evidenced in the building of these old jails, and in most cases, the bulk of the money expended was placed in a commodious residence for the sheriff, with one to four small rooms in a wing of the building for the jail, in which rooms, placed in the center, are the cells, usually eighty per cent solid metal with twenty per cent openings. The elementary principles of sanitation were totally ignored, and so-called disinfectants were used in lieu of the scrubbing brush and soap. Black was the favorite color used in painting the interior of the jails, resulting in a dungeonlike darkness which was almost invariably contributed to by dirty windows obstructing the entrance of light.

Isolation and segregation of prisoners have been totally ignored. The hardened criminal, first offender, and the juvenile prisoner have been confined in the same cells, thus converting our jails into veritable schools of crime, and the constant contamination by association must have been incalculable. Another deplorable fact, and one which I am ashamed to say, still obtains, is that there are no matrons in any of the jails of the State of Alabama. Female prisoners, regardless of color or the crime of which they are accused, are cared for by male deputies.

In view of the fact that there is no law requiring matrons in the jails, I shall use every effort to have the next Legislature of Alabama remedy this evil.

The fee system, that far-reaching, deplorable, pernicious and unwittingly criminal method of compensating sheriffs and other officers, obtains to-day in Alabama. The result of this system nearly beggars description; it inculcates into our jails the almighty dollar; prisoners are arrested because of the dollar, and, shame to say, are frequently kept in captivity in these steel cages for months awaiting trial on account of the almighty dollar.

Prisoners in the jails of Alabama are fed by the sheriffs without supervision of any kind whatsoever. The food usually consists of a small piece of salt side-meat, about three tablespoonsful of beans or pease and a "hunk" of poorly made corn bread, said bread usually made of meal and water without grease. The sheriffs are recompensed by the State for feeding the prisoners as follows: From one to ten prisoners, for each prisoner, sixty cents per day; for more than ten and not exceeding twenty prisoners, fifty cents per day; for more than twenty and not exceeding forty prisoners, forty-five cents per day; for more than forty prisoners, thirty cents per day. In most of the jails only two meals are served daily.

I estimate, and base my figures on frequent inspections and close observations of the meals served, and from reports received, that in one jail in our state the profit to the sheriff is no less than one thousand dollars a month on his feed bill alone. This is a woeful waste of the State's funds and should be remedied by some legislative enactment.

Appreciating in part the above described deplorable conditions, the Legislature of 1907 deemed fit to adopt some means of remedying them, and created an office known as the Inspector of Jails, Almshouses, etc., thus placing the jails under state supervision and control, but not under state ownership. After four years of hard work on the part of the department above named, it was found that the law was inefficient on account of a lack of authority or power given the Inspector, and in consequence of which the Legislature of 1911 changed the name of the department to that of State Prison Inspector, and modified the law, making it more explicit and extending the authority of the Inspector to enforce sanitation, ventilation and hygiene, and, while it is by no means complete nor a perfectly effective instrument for the purpose designed, it is, under the powers given, and the duties imposed upon the Inspector, a tremendous advance over the former system.

Since its enactment, eight years ago, the prisoners of Alabama jails have received, at least, the consideration that is due a human being. In that time, thirty jails have been built and remodeled along scientific lines, and in most of the jails of the state an excellent sanitary system has been insisted upon and attained. Light and air are freely admitted; conditions which made for infection have been removed, and food is served in many of the jails which may be eaten without the spur of extreme hunger.

There are yet a number of jails to be rebuilt or remodeled, and they will receive attention in due course of time.

The law makes it the duty of the State Prison Inspector to inspect at least twice a year each jail and almshouse in the state, likewise city prisons in towns of ten thousand or more population, and to aid in securing the just, humane and economic management of

all such institutions; to require the erection of sanitary buildings for the accommodation of the inmates of such institutions, and to investigate the management of all such institutions and the conduct and efficiency of the officers or persons charged with their management; to require that the buildings and grounds of said institutions be kept in the best sanitary condition, and to make a detailed report to the Governor after each visit of the number of inmates in each such jail, prison and almshouse, their condition as to health, the condition in which the buildings are kept, the arrangement for the sanitation of the buildings and grounds; the cost of the management of such institutions, and of keeping the inmates, and whether the money appropriated for such purposes is properly expended therefore, and he shall at the same time give a copy of his report to the Court of County Commissioners, Board of Revenue, City Council, or other board or body having control over the jail, prison or almshouse dealt with in such report, together with such recommendations for the betterment of the conditions thereof as he may deem necessary.

This law also confers upon the State Prison Inspector the authority to formulate such rules and regulations as he may deem necessary with reference to hygiene, sanitation, cleanlinesss and healthfulness in these institutions. It also confers upon him the power to have all jails put in a proper sanitary condition, and to make such repairs, alterations and additions as he may deem necessary, and if, in his opinion, the sitnation requires it, to condemn the jail and order the erection of a new one.

An effective weapon placed by the law in the hands of the Inspector is his power to order the removal of any or all prisoners from any jail in which they are improperly cared for, or which is unsafe, to the jail of another county; and, as a large part of the compensation of Alabama's sheriffs comes from the feeding of prisoners, as previously outlined, it is needless to say that, it has seldom been necessary to use it to secure proper food or fit conditions.

In laws dealing with this subject, it is certainly at this period of the movement, absolutely essential to give the Inspector almost arbitrary power. Unless his recommendations and orders can be summarily enforced, lapse of time, political affiliations, and local sympathy with officers based on ignorance of the real conditions, would paralyze or, at least minimize the effect of his efforts. Every jail inspection law should require and contain provisions which will effectively secure the building of jails throughout which light and air may be freely admitted, which have sufficient room for physical exercise, which are adequately heated, and which have provisions for securing the personal cleanliness of the inmates. There should be, of course, provisions for a window in each separate cell. The prison should be so constructed as to be absolutely fire-proof; or if not, some provision should be made whereby each cell could be unlocked from one point.

The Alabama prison inspection law requires that all plans and specifications for jails or improvements thereon be submitted to the State Prison Inspector for approval.

In building new jails in Alabama, the following ideas are being carried out: Shower baths are being installed in the male apartments, and bath tubs in the female and hospital apartments. The cells are being placed against the walls (all walls being lined with steel) with a window in each cell. The floors are of concrete on metal beams, and are laid on an incline to a drain pipe. In each central corridor is installed a concrete bench, likewise a sanitary drinking fountain. The dirty, vermin infected, unsanitary mattresses has been discarded and replaced by the swinging canvas hammock.

It is unlawful to confine in the same room or apartment white and negro prisoners; and men and women, except husband and wife, must not be kept in the same room or apartment. This necessitates a minimum number of four apartments in each jail, to which we are adding, when possible, hospital and juvenile departments. Other requirements of this law are as follows: Hot and cold water for bathing purposes; soap and towels; clean clothes when the prisoners are unable to provide them; compulsory bathing upon entrance and once a week thereafter; semi-annual fumigation followed by two coats of white paint on all of the interior, including all cells and metal work; fumigation of jails following removal of prisoners affected with infectious, contagious, or communicable diseases; adequate janitor service; a night watchman; kitchens to be adequately screened against flies; duty of the sheriff to keep the jail in a sanitary and cleanly condition and to prevent spitting on the floors and walls; and the sheriffs are required to render a monthly report to the Inspector not later than the 10th of each month, for the previous month, giving the number of prisoners, their races and sex, their physical condition, and such other detailed information as may be required.

These prisons must be secure, of course. They may also be healthful and pleasant. They should in all cases be so constructed

that sunlight and fresh air may be freely admitted.

It is not unusual to hear from convicts the statement: "I never had a chance." We have not yet reached that golden age when every citizen of this great nation will have a chance, but we can at least hasten the day when the unfortunate, upon whom the State lays its correcting hand, will have a chance to be a stronger, better, cleaner man than when he entered.

When that day comes, the public good which the law exists to secure, will find that it is in receipt of a more valuable revenue in human character than is the financial return that is bought with the sufferings, the lives, and, it may be, even the souls of brother men.

While no provision is made in our present law for other than the physical well being of our prisoners, I trust that ultimately some will be made whereby they may be mentally advanced, or at least occupied. Modern criminology recognizes that crime is the product of some abnormality, and this lies as often in an unoccupied as in a diseased, mind. A few magazines, a few well selected books, might well drop a seed or commence a mental habit that will redeem a criminal and restore to society a citizen. I am aware that the suggestion of a prison library may be met in some quarters with ridicule, and that I may be charged with maudlin sentimentality, but I console myself with the thought that no reform was ever commenced, no work for the betterment of mankind ever engaged in that did not struggle under such discouragment from the unthinking public. It will be a happy day for society when some of its members may look upon a jail as a place where health was not lost, but regained, and where habits and mental attitudes were fixed, whose tendencies were not downward to evil, but upward to better things.

Sinus Arrhythmia.—Aalsmeer reviews the literature on this subject and describes in minute detail a case in which slight tachycardia was accompanied with some arrhythmia evidently traceable to some infectious process. Under digitalis the sinus arrhythmia grew worse and the conduction of the impulse became defective until the drug was dropped. Both the accelerator and the vagus systems seemed to be functioning perfectly, and the cause of the disturbances was evidently some change in the reacting organ itself. The prognosis in this tachycardia form is not so grave as in cases of bradycardia. With the latter, the heart action might become completely arrested.

SLIDING HERNIA OF THE URINARY BLADDER: WITH REPORT OF TWO CASES.*

By Louis Frank, Louisville.

Sliding hernia of the urinary bladder must be exceedingly rare, as the subject is accorded but little consideration by the majority of surgical authors. Even simple hernia of the bladder is infrequently encountered, although the pathology was accurately described as early as the twelfth century.

Sir Astley Cooper in his classic monograph, written in 1804, mentions having seen only four cases of vesical hernia, two in living subjects and two at necropsy. From his description one of the latter was undoubtedly of the sliding type but was unrecognized at the time.

Kirschner, in 1911, reported fifteen cases of sliding hernia occurring in a series of five hundred herniotomies performed in the St. Louis, Mo., city hospital, in none of which was the urinary bladder mentioned as the sliding organ.

Three cases of sliding hernia have come under my observation during the last twelve months. In two the sliding viscus was the urinary bladder, in the third a small segment of the descending colon, without peritoneal covering, was found in the hernia sac.

By "sliding hernia," or the so-called *hernie par glissement* of the French, is meant a hernia in which a portion of some abdominal viscus slides or is forced downward through the opening into the hernial sac or without intestine or omentum, the sliding organ being necessarily incompletely enclosed by peritoneum.

Accurate ante-operative diagnosis of a sliding hernia is seldom possible, and the problem of dealing with such a hernia is by no means simple. Unless the nature of the pathology be promptly recognized during the operation, irreparable damage may be inflicted upon the sliding viscus. It is worthy of note in passing that while in sliding hernia strangulation of the intestinal portion is of common occurrence, the actual sliding contents of the sac cannot become strangulated. This may be readily understood when one studies the formation of sliding hernia and the relation which the ring occupies to the blood supply of the sliding portion of the sac contents.

The two cases of sliding hernia of the urinary bladder herein reported are the only ones of that type which I have encountered in an experience of over twenty-five years.

*Read before the Jefferson County Medical Society.

Case 1. D. H., a male, aged thirty-eight, was referred to me April 7th, 1918, by Dr. N. S. Howard, of Harlan, Kentucky. A right inguinal hernia was first noticed by the patient four years ago, when he stated "that he experienced a weak, sickening sensation while carrying a heavy weight." When seen by me the herniation was twelve centimeters in diameter with the patient standing. He complained of backache and a stinging pain at point of hernia when protrusion was marked. The man was rather fleshy; the right external ring was open sufficiently wide to easily admit a thumb; a truss had been unsuccessfully worn. Clinical diagnosis: right inguinal hernia.

Operation April 8th, 1918, under nitrous oxide and ether anesthesia. Incision two centimeters above and parallel to Poupart's ligament; hernial sac contained fundus of urinary bladder and loop of small intestine; sac incomplete at ring due to bladder herniation. A section of the sac with its peritoneal fat was sutured over the uncovered part of the bladder thus completing the sac; this new sac was then closed by purse string suture and the distal portion excised, the bladder being returned to the abdominal cavity.

The Bassini operation was then performed with the addition of a suture above the internal ring and transplantation of stump of sac under the conjoined tendon. Plain catgut was used for suturing peritoneum and skin; No 2 chromic catgut mattress sutures for fascial closure. Wound dressed with dry gauze and adhesive strips. Operative diagnosis: right, indirect, inguinal hernia, with sliding hernia of urinary bladder.

Convalescence was without untoward incident. The operative wound healed per primam and the patient was discharged from the hospital well April 25th, 1918.

Case 2. W. W., male, aged fifty-eight, was referred to me by Dr. C. F. Hancock, of Jeffersonville, Indiana, October 16th, 1918, because of a strangulated hernia. The patient stated that he had been in robust health until five years ago at which time he weighed two hundred and sixty pounds. A right inguinal hernia had been present throughout adult life, and a truss had been worn until three years ago. According to history subsequently obtained, this patient had been the subject of diabetes mellitus for the last four years; there was noted considerable itching and dermatitis about the feet. The fact that he had diabetes was unknown to me until after the operation had been performed which was really an emergency procedure.

Early in the morning on the day before admission to the hospital the hernia became irreducible and painful; the attending physician attempted reduction but failed. During the next thirty hours the patient vomited almost constantly, bile and material feculent in odor being noted in the vomitus. Dr. Hancock was called at that time, and recognizing the nature of the pathology, sent the patient to the hospital for immediate operation. Examination revealed a tense, elastic, tender mass in the region of the right external abdominal ring. Clinical diagnosis strangulated right inguinal hernia.

Operation October 16th, 1918, under nitrous oxide and ether. Incision in inguinal canal extending downward over tumor-mass; on opening hernial sac considerable fluid escaped. The sac contained loop of ileum, portion of urinary bladder, and attached to the summit of the contained bladder a solid tumor measuring 2x6 cm. The spermatic cord was very dark but rapidly improved in color when the hernial stricture was relieved by incision. Pedicle of bladder tumor clamped and neoplasm removed, the stump being sutured with celluloid linen. The Bassini operation was then performed with addition of a suture above internal ring and transplanting stump of sac under the muscle. Three No. 2 chromic catgut mattress sutures used to close canal and same number for fascial closure; plain catgut No. 1 employed for skin suture. Wound dressed with dry gauze and adhesive strips. Operative diagnosis: strangulated, right, indirect, inguinal hernia, sub-mucous bladder tumor.

Urinalysis, October 17th, 1918, showed specific gravity, 1025; albumin, a distinct trace; sugar, large amount present; indican, small quantity; acetone, positive. Microscopic examination disclosed pus and epithelial cells, an occasional blood cell, and a few hyaline casts.

As soon as it became known that this patient was a diabetic subject he was placed on the Allen treatment. Improvement was rapid, sugar promptly disappeared from the urine, and he made as smooth a convalescence as any patient I have ever operated upon notwithstanding our misgivings at to the outcome for the first few days after the operation. Urinalysis, October 27th, 1918: Specific gravity, 1020; albumin and sugar, negative; indican, a trace; an occasional epithelial cell; no casts. The patient was dismissed from the hospital well on November 1st, 1918.

The bladder tumor was submitted to Dr. Stuart Graves, of the Pathological Department, University of Louisville, for examination, who reported that it was "a fatty growth showing evidence of recent acute inflammation."

My principal object in reporting these cases is to suggest that the greatest care be always exercised during herniotomy, particularly for hernia of the inguinal type, to ascertain the presence or absence of a sliding viscus in the hernial sac. In certain cases where a urinary or fecal fistula has developed after herniotomy, quite likely a sliding hernia of the intestine or bladder was present which was unrecognized during the operation and injury thus resulted.

I wish to particularly emphasize the fact that unless the pathology be definitely recognized during the operation, the sliding viscus may be irreparably damaged during dissection or separation of adhesions.

DISCUSSION:

J. R. Wathen: I would like to ask Dr. Frank whether he is positive about the type of hernia in the two cases he has reported. I understand, of course, they were oblique hernias, but were they direct or indirect, i.e., external or internal? It has always been my impression that sliding hernia of the bladder are direct and not indirect in type.

W. C. Dugan: I reported before this society some years ago several cases of sliding hernia of the intestine. When the first case came under my observation I thought there were merely some intestinal adhesions, and did not observe the advice which Dr. Frank now gives us, i.e., to be very careful about the separation of adhesions. I tore loose what I believed to be an attachment to the intestine, resulting in serious damage, and the patient died. That was a sliding hernia of the descending colon.

The next case was a sliding hernia of the cecum which was also unrecognized at the operation, the blood vessels were injured, gangrene of the cecum followed, and there was a fatal termination. An autopsy was made and it was then realized that I had made a great mistake. A sliding hernia is exactly what the name implies, that is a portion of some viscus slides into the hernial sac.

Dr. Frank mentioned that one of his patients with sliding hernia was very fleshy. All the people I have seen with this type of hernia have been fat. He also intimated that the majority of sliding herniae were secondary. I believe they all are, and the ring is always large.

Operation for sliding hernia of the intestine is simple if the pathology is recognized and if the operator has ever seen one before. Dr. Frank will not forget a sliding hernia so long as he lives! The sac should be incised from below to the internal ring and a flap of peritoneum made to cover the back part of the herniated intestine; although some operators prefer to make the incision on only one side. The method of closure mentioned by Dr. Frank is the one I have always used.

I do not understand how a sliding hernia of the urinary bladder can possibly occur primarily. When the bladder is comfortably distended it is just palpable above the symphysis pubis; it is covered with peritoneum downward to the ileo-hypogastric artery on each side, and behind to the point where it is reflected on the rectum; the whole fundus of the bladder is covered by peritoneum. Therefore, I cannot understand how the viscus can slide under the peritoneum and the obliterated hypogastric artery and then outward through the internal ring.

The herniae which I have seen where a portion of the bladder occupied the sac were the result of traction from adhesions. It is recognized that the intestine may become adherent to the bladder which is thus pulled downward into the sac thus forming one part of the hernia contents. The bladder is simply pulled downward into the sac along with the intestine. In such cases after separating the intestine from the bladder the latter is easily replaced in the cavity. However, if the pathology is unrecognized much damage may be done during the operative steps.

Louis Frank, (closing): In answer to Dr. Wathen's question: In each of the two cases reported there was a right, indirect, inguinal hernia. There can be no question about the accuracy of the report.

Referring to Dr. Dugan's inquiry as how the bladder gets into these herniae: I believe it is recognized that all sliding herniae of any size are the result of traction. I do not mean that there is necessarily a direct force attached to the bladder which pulls it into the hernial sac, because I believe all these herniae are really congenital in origin. Just what happened at the time of descent of the testes in these cases, or how long these herniae had really existed, I do not know excepting for the time they had been noted by the patient.

In the gradual formation of a large hernial sac, it is no more difficult to conceive of the bladder being pulled into the sac from one side than it is to understand how the cecum, which is situated much further away, is pulled in from another direction; or how the sigmoid, which is situated still further away, may in exceptional cases be pulled into the sac. As the peritoneum gradually descends the sac is enlarged, or if a large sac exists from the beginning, I can readily understand how any viscus situated low in the pelvic cavity may be pulled downward into such a hernial sac.

In the second case reported probably a portion of the fundus of the bladder first escaped into the sac and the small fatty tumor was formed by gradual constriction; and it was this tumor which

assisted in dragging the larger portion of the bladder downward into the sac.

I might refer the gentlemen to Johnson's Operative Therapeutics, chapter on hernia, by Moschowitz, who presents several drawings showing the formation of bladder herniae. His illustrations are understandable and satisfactorily explain the formation of these herniae. If I mistake not Moschowitz states that sliding hernia of the bladder may be of the indirect as well as the direct type.

CANCER OF THE COLON.*

By J. Garland Sherrill, Louisville.

The gentleman before you is now fifty-four years of age. I have not seen him since shortly after he was operated upon in August, 1917. At the time of my first observation he gave the history of "stomach and liver trouble" since the age of twenty-two. His weight was about one hundred and forty pounds. He had an attack of intestinal obstruction, according to the history obtained, two years prior to the time I first saw him.

On August 4th, 1917, he began complaining of "colic" which persisted day and night. Purgatives were administered without result. A few scybalous masses were voided after repeated enemata. He had no elevation of temperature, pulse about normal. He vomited several times during the day. Examination showed the lower abdomen "doughy" and distended. The diagnosis was made of cancer of the colon with partial obstruction. He had the usual physical signs in the intestine proximal to the obstruction, viz., ballooning and exaggerated peristalsis. His symptoms were so clear that no time was lost with the usual roentgenoscopic investigation of the intestine.

At the operation the strictured portion of the colon was resected and an end-to-end anastomosis made. The report of the pathologist was "adenocarcinoma of the intestine." I saw the patient to-day for the first time since he left the hospital, and have not yet examined him carefully.

It may be interesting to note that Dr. D. Y. Keith gave this patient a number of X-ray treatments after the operation, which may be a factor in his present favorable condition. He now seems somewhat emaciated, but this may be attributed to an attack of influenza which he suffered twelve weeks ago.

Examination shows no evidence of an abdominal tumor and the patient is in good physical condition. The neoplasm involved the descending colon and was completely removed. No evidence of glandular implication was noted. The man made a satisfactory recovery after the operation and was dismissed from the hospital in about three weeks.

DISCUSSION:

Bernard Asman: Dr. Sherrill is certainly to be congratulated upon the result of his operation in this case. That the patient was operated upon for intestinal carcinoma and is still living after two years speaks well for the thoroughness with which the surgical procedure was executed. Of course the question of operation in cancer depends largely upon the judgment of the individual surgeon.

We all realize there is a time in every cancer when operation may be safely undertaken with reasonable assurance of a favorable ultimate outcome. However, after obstruction has developed in cancer of the intestine, it is sometimes a serious question whether an attempt should be made to remove the neoplasm. Many such cases are distinctly inoperable when first observed by the surgeon. Ordinarily where there is no glandular involvement, or where all enlarged glands can be extirpated, the operation is followed by favorable results; but no one can possibly foretell what the result is going to be in any case. This man may now have a recurrence, although there appears no clinical evidence of it, excepting that he complains of a muco-purulent rectal discharge mixed with dark blood. He also says he has some hemorrhoids, and it may be the discharge is from the hemorrhoids and that the site of the former neoplastic formation is in perfect condition.

E. S. Allen: Dr. Sherrill was fortunate in getting this patient at a time when radical operation could be safely performed for removal of the neoplasm. I have been so unfortunate as to have had three cases of malignant disease of the colon during the last year.

One patient had a malignant tumor at the head of the cecum with extensive involvement of the mesentery. I operated upon him last April, doing the so-called "short-circuit" operation. I did not consider it feasible to remove the neoplasm as it was so extensive, therefore the ileum was short-circuited to the colon in a higher situation. The man is still living but now has an enormous mass in the right abdomen, and it is a question how long he can live.

The other two patients had obstruction from malignant disease of the colon. In one case I did a colostomy to relieve the obtruction hoping the patient would sufficiently improve afterward to withstand a secondary radical operation, but

*Clinical report with exhibition of patient before the Jefferson County Medical Society, May 5, 1919.

he never became strong enough to justify the attempt. The other man was admitted to the hospital in an exhausted condition, having vomited almost constantly for four or five days. The colon was enormously dilated, being four or five times its normal size. In this case I merely made an opening through the obdominal wall and inserted a drainage tube into the intestine. The patient is gaining strength and is going home hoping to recuperate sufficiently to permit radical operation later.

In the case reported the patient was very fortunate in reaching Dr. Sherrill at a time when radical operation could be successfully performed.

J. G. Sherrill, (closing): Oftentimes the surgeon does not see this class of patients until acute obstruction has developed. The reason for this is that, in the majority of instances, the early symptoms are vague and the neoplasm involves the intestine from within, the intestinal lumen is only partially occluded during the early stages, there remaining for some time a small opening which permits the passage of feces.

With modern improvements in surgical diagnosis, particularly the Xray (both fluoroscope and skiagram) we ought to get these patients much earlier than formerly. I have seen quite a number of patients with intestinal carcinoma, and the majority of them have come to me with symptoms of acute obstruction. The patient has a train of vague and obscure abdominal symptoms, and finally acute obstruction develops, and the surgeon is then consulted. However, I feel sure we are now getting these cases earlier than formerly because of improved methods of examination.

In the presence of acute obstruction it will sometimes be necessary to perform colostomy or enterostomy to afford immediate relief. Later when the patient improves perhaps radical operation may be safely undertaken. I recall one case of this kind where a young man with intestinal carcinoma lived a year after colostomy and felt so well that he would not consent to further operative procedure. He finally died as the result of extension of the disease. If the individual can be convinced that it is feasible to perform radical operation in the beginning, I believe that is the plan of procedure which should be followed. However, if the patient is in extremis when he comes under observation, it is proper to give him temporary relief by one of the minor procedures mentioned in the hope that he may later improve sufficiently to justify radical operation. Massive doses of X-ray or radium may be beneficial in cases of this character. By making a careful examination with the X-ray early diagnosis is possible in the majority of instances. Where there is no glandular involvement the chances for permanent cure from surgery are favorable.

I recall one case in my early experience where operation was probably unjustifiable. I would not now operate under similar circumstances. The patient had a fecal fistula following operation at the hands of another surgeon, and he had an abdominal mass as large as a cocoanut when he applied to me for treatment. He was sent to St. Anthony's hospital and a large colloid carcinoma of the intestine removed. There was extensive involvement of the lymphatic glands adjacent to the neoplasm and the peritoneum and liver were also implicated. The patient recovered from the operation, which included resection of the intestine and removal of the neoplasm, but only lived about a year.

As a rule where malignant disease has extended beyond the limits of the intestine, in other words where the neoplasm has extended into adjacent glandular structures, unless one can be absolutely certain of going wide of the work, all of the diseased tissues cannot be removed. Where the lymphatic glands are extensively involved, the results are usually unfavorable.

INTUSSUSCEPTION IN A WOMAN THREE DAYS AFTER DELIVERY: INTERNAL HYDROCEPHALUS IN A BOY AGED ELEVEN YEARS.*

By E. S. Allen, Louisville.

Case 1. On January 15th, 1919, I was called to eastern Kentucky to operate upon a patient for what was supposed to be a strangulated hernia. After driving twenty-five miles over mountain roads in an automobile, I arrived at the patient's house at twelve o'clock at night.

I found the patient was a woman thirty-five years of age, the mother of seven children, the youngest being three days old. She had been vomiting almost incessantly for forty-eight hours. Upon examination a distinct movable abdominal mass could be outlined just to the right of the umbilicus.

The patient had been given castor oil, Epsom salts and frequent enemata with no result. A diagnosis of intussusception was made. An operating table was improvised by using an ironing board, a sewing machine and a barrel. The abdomen was opened under a general anesthetic, and there was found an intussusception of the ileum into itself, involving between six and eight feet of the in-

*Read before the Jefferson County Medical Society.

testine; the intestine was gangrenous. A pint of bloody serum was found in the abdominal cavity.

Some attempt was made to reduce the intussusception, but finding it so completely strangulated excision was thought to be the most appropriate step. A lateral anastomosis was first undertaken. Just as the anastomosis was completed an area of intestine six inches from the point of anastomosis was found devitalized, so the lateral anastomosis had to be excised and a second anastomosis performed. Believing that an end-to-end anastomosis would save time this was rapidly accomplished. The patient made an uninterrupted recovery and is now perfectly well and attending to all her usual duties.

In looking over my surgical material I found that I had neither an intestinal needle nor silk; so a spool of black thread and a cambric needle borrowed from the family were used in performing the anastomosis.

I report this case because as a rule we desire the most favorable surgical environment in doing intestinal work. In this case there was nothing conducive to perfect technic, and I feel much gratified that the patient was free from any untoward symptoms following the operation.

Case 2. In reporting the next case I desire to exhibit the specimen, an hydrocephalic brain removed at autopsy from a boy eleven years of age. The history of the case is as follows:

History of parents, negative. This boy was one of a family of six children all healthy. In October, 1918, he was struck by an automobile; the car was moving very slowly and did not run over him but knocked him down, his head striking the pavement. He got up immediately and insisted that he was not hurt. The owner of the automobile, however, took him home. The boy played that afternoon, but after supper complained of headache, and the following day vomited.

From October until I saw him in January, he had been vomiting at intervals. He had been seen by several physicians who attributed his condition to some gastro-intestinal disturbance. Unfortunately he had also fallen into the hands of a "chiropractor" and apparently rapidly grew worse under his treatment.

When I saw him in January he was very much emaciated, presenting the picture of a most advanced case of marasmus; vomiting several times a day; mentally dull; abdomen flat; temperature 100' F., pulse 130; and he complained only of pain in his head. X-ray examinations were made of the head and spinal column which proved negative.

The boy was placed on concentrated liquid nourishment with an alkali and his vomiting ceased. However, he continued to grow weaker and died in about six weeks after entering the hospital.

Autopsy: Abdomen, negative; chest, negative; head, negative as to fracture. The dura was adherent in several places, with an inflammatory deposit. The lateral ventricles contained twenty-two ounces of fluid. They were very much distended. Microscopical examination of this fluid was negative as to bacteria.

Conclusion: Internal hydrocephalus probably of tubercular origin.

DISCUSSION:

J. G. Sherrill: Intussusception is not uncommon in infants, but I have never seen such a case in the adult. I can well understand that intussusception in an adult would be less serious than in a child because of the greater resistance of adult life. Dr. Allen is to be congratulated on the results he obtained, particularly in the surroundings in which he found the patient.

I have always favored immediate operative intervention even in the intussusception of children. While intestinal resection is a serious operation in a young child, if much time is wasted in efforts to relieve the intussusception the probability is a fatality will occur. If the case is recent we may be justified in making an effort to reduce the intussusception, but in older cases where adhesions have formed rapid anastomosis is the best plan of procedure.

The second case reported is of great interest particularly from a medico-legal standpoint. When a patient develops cerebral symptoms following an accident trauma of the brain must always be suspected. Therefore it is important that cases of this kind be studied carefully to determine just what part the accident played.

While it is recognized internal hydrocephalus may develop from trauma without fracture of the skull, such cases must be extremely rare. I believe this was a case of internal hydrocephalus from obstruction of the communication between the ventricles, and that the increased pressure interfered with the nutrition of the child and finally caused its death.

E. S. Allen, (closing): In first case reported the patient was the mother of seven children. In trying to determine the cause of the intussusception inquiry was made whether she had been given pituitrin during or following her last labor. I was informed that no pituitrin had been administered.

I made only slight efforts to reduce the intussusception. The intestine at the point of invagination felt thick and seemed to be adherent, thus the danger of injury was increased. I considered the method of incising and reducing as much

of the intestine as possible, saving all that appeared healthy, but on account of the dangers of subsequent infection in the unfavorable surroundings I concluded that rapid anastomosis was the safest method of procedure.

FATAL LARYNGEAL EDEMA FOLLOWING INFLUENZA.*

By Henry Enos Tuley, Louisville.

I was called to the medical ward of the hospital three days ago to see a man whom the interne said had "suddenly gone to the bad" shortly after admission. I found the patient in a sitting posture in bed, his expression was anxious, he was bathed in cold perspiration, and his breathing was so noisy that it was difficult to distinguish anything definite on stethoscopic examination of the chest. The man was practically pulseless, dyspnea was marked and it was evident he was critically ill.

I telephoned for Dr. I. A. Lederman immediately as the patient's larynx showed some edema and it was thought tracheotomy would become necessary. While preparations were being made for the operation I returned to the hospital office, and within fifteen minutes was notified that the man was dead. An effort had been made previously to determine whether he had swallowed or inhaled something which caused the obstruction, but the examination was negative.

I immediately reported the matter to the coroner so an autopsy could be obtained. This was made by Dr. Stuart Graves who will report his findings. A peculiar feature in connection with the case was that the patient was a fugitive from justice, and the grand jury three hours before death had reported the charges against him were not sustained. Thus so far as being a criminal was concerned, he was liberated by the grand jury; and he was also liberated by death. The man gave a history of influenza and had been acutely ill for two days prior to admission.

DISCUSSION:

Stuart Graves: The autopsy in the case reported by Dr. Tuley showed a bilateral resolving pneumonia with extensive left-sided pleuritis, and between the lung and the diaphragm was a cavity which contained approximately 800 c. c. of pus. There was marked mediastinal edema. The interne said that on admission the man complained of feeling "as if he had swallowed his tonsil," but examination revealed nothing in the esophagus.

At autopsy the esophagus was opened and nothing abnormal found. The trachea was incised downward to the bifurcation. The lower portion showed considerable congestion of the mucosa and there was marked edema of the glottis on the left side, the mucosa and submucosa from the aryteno-epiglottidian fold to the base of the epiglottis being swollen, puffy, soft and exuding an amber colored fluid. The right side was not involved to the same extent as the left. In appearance the edematous glottis resembled the fibrinous exudate found on the lateral surface of the left lung, i.e., soft and thick like fresh chicken fat. The kidneys showed slight nephritis. Bacterial cultures of fluid from the lung showed streptococcus hemolyticus. I regret that we did not make bacterial cultures from the edematous tissue of the glottis. We understand, of course, that one of the most striking features of tissue reaction to the streptococcus is a sero-fibrinous exudate. It would have been interesting to determine whether there was any direct connection between the pulmonary edema and the edema of the glottis. It is presumed, however, that there was a localized streptococic infection of the glottis which had no connection with the edema in the lung or the mediastinum.

I. A. Lederman: Death in the case reported occurred so quickly that I am sure nothing could have been done to save the patient, i.e.,within fifteen minutes from the time he was found in the condition described by Dr. Tuley. Unless tracheotomy had been performed immediately it would have been of no benefit to the patient. I telephoned the hospital as soon as possible after Dr. Tuley's message reached me, and was then informed that the man had died.

There have been reported a few cases of a peculiar laryngotracheitis complicating influenza, but I never encountered such a case. Jackson mentions a few cases and doubtless others have been observed in military practice. However, it must be an exceedingly rare complication of influenza. There was probably a secondary infection with extensive infiltration of the larynx.

It is said that these cases are rapidly fatal unless immediate tracheotomy is performed. Recovery is the rule if the operation is done immediately, provided the general condition of the patient is good.

*Clinical report before the Louisville Medico-Chirurgical Society.

Trench Fever.—Piga and Lamas review the various publications on trench fever (Wolhynia fever, five day fever) and emphasize that it may appear elsewhere than in the trenches, and that physicians should be on the alert to recognize it. They do not regard the means of transmission of the disease as having been definitely ascertained although transmission by lice is most probable. Treatment to date can be only symptomatic.

SARCOMA OF THE ORBIT: CASE REPORT.*

By Adolph O. Pfingst, Louisville.

The specimen which I exhibit represents a tumor which almost filled the right orbital cavity of a man aged 43 years; it was removed to-day together with the eyeball which is in a shrunken state.

According to the history obtained the patient became blind in that eye four years ago without pain or other symptoms. Two years later he began to have attacks of severe pain, swelling and redness with protrusion of the conjunctiva, which his wife compared to "proud flesh between the eyelids." These attacks of swelling occurred at intervals of three or four weeks and generally subsided within a few days. The pain was described as extremely severe during some of the attacks.

Last August (1918) the swelling appeared after the usual period of quiescence; it was more extensive than ever before, and there seemed to be more prominence of the eyeball. Instead of subsiding within a few days as formerly the swelling remained and there was more protrusion of the conjunctiva. As the swelling increased during the last attack, the pain lessened; in other words, since last August he has had very little pain.

On examination there was found a shrunken eyeball which was turned downward, great swelling and bogginess of the conjunctiva, and in addition something which I had never seen before, i.e., a marked varicosity of the veins of the conjunctiva; the veins were very large and tortuous over the conjunctiva and a considerable portion of the orbital tumor; the eyeball was immovable. The patient was in good physical condition; there was no emaciation and no indications of any other existing pathology; there was no history of malignancy in the family.

The tumor including the eyeball was enucleated this morning under general anesthesia. There was nothing of interest concerning the operative procedure, excepting that after the eyeball with the main portion of the tumor had been removed, a remaining portion could be plainly felt deep in the orbital cavity extending to its apex. This was also removed secondarily.

Some of the most interesting features in connection with this case are the development of venous varicosities on the conjunctival surface, and the early development of blindness. It would appear that the growth developed deep in the orbit making pressure on the veins and optic nerve causing venous stasis and subsequent blindness. Subsequent development in the orbit caused the swelling, pain and finally protrusion of the eyeball.

It is well known that various types of neoplastic formations may occur in the orbit; e.g., cystomata, osteomata, lymphomata, and the malignant growths. Of the latter the epitheliomata develop in the anterior portion of the socket and usually involve the eyeball or corneal limbus. This tumor apparently developed behind the eyeball, and the history is indicative of sarcoma. However, I doubt whether it is a simple sarcoma as considerable myxomatous tissue may be noted on macroscopic inspection of the cut surface. The surface in parts appears cystoid in character, a number of small cysts being plainly visible.

Sarcomata may develop in any portion of the orbit where there is fibrous tissue. They not infrequently spring from the periosteum and from the sheath of the optic nerve; also, I believe, from the optic nerve itself, although if I mistake not the optic nerve is more frequently involved secondarily than primarily. Most orbital sarcomata take their origin within the eyeball and invade the orbit secondarily. However, from the history of this case and the gross appearance of the tumor, I believe it is a sarcoma which originated near the optic foramen and then extended forward. The antero-posterior diameter of the eyeball was much diminished; the eye was very much flattened; the anterior and posterior layers of the sclera were pressed together; yet the interior of the eyeball to the naked eye appeared to be free of new growth.

I did not practice exenteration in this case because: (a) I was not positive that the growth was malignant, and (b) if malignant it had already involved the optic nerve as far and probably beyond the optic foramen; so that exenteration of the orbit—a most horrible operation—would have been productive of no more favorable results than enucleation. This man will almost certainly have a recurrence.

DISCUSSION:

S. G. Dabney: Dr. Pfingst's case cannot be discussed intelligently until the eyeball has been opened and examined. However, my guess as to the nature of the tumor differs from that of Dr. Pfingst.

Here is a man in the forties who lost the sight of one eye without pain; his eye had not been examined previously by a specialist. The indications are that he had a detached retina or possibly an intrabulbar hemorrhage. A year or two later he began having pain, probably glaucoma. By that time the growth had so increased the intraocular tension that he began having glaucomatous inflammation perhaps associated with irido-

*Clinical report before the Louisville Medico-Chirurgical Society.

cyclitis. The usual course of such a condition is that glaucomatous symptoms recur from time to time, and the growth finally makes its exit from the eyeball and pushes aside the orbital contents.

The history is rather typical of the sarcoma of the choroid with one exception, i.e., the eyeball is shrunken more than one would expect. While that sometimes occurs in sarcoma it is not the usual course. Intra-ocular sarcoma not only produces glaucoma, but sometimes a shrunken eyeball; and that seems to have occurred here. The relief from pain simply means that the growth has made its exit from the eyeball, the shrunken eyeball was pushed forward, and the orbit then became involved secondarily.

Primary sarcomata of the orbit are less common than the choroid, are rather rare; I have seen several of them. I hardly think it likely this was a primary sarcoma of the orbit. When the eyeball is examined by the pathologist if no growth is found inside the eye, I will then agree that it is a primary sarcoma of the orbit.

Sarcoma of the choroid also produces blindness. I saw a case of this character with Dr. William Cheatham last week in which there was detachment of the retina and the man became blind.

The prognosis in malignant disease of choroid depends upon the time when the operation is performed. Fuchs' statistics are not recent, but are still quoted; he states that fifty per cent of the patients remain well if operated upon before the growth has penetrated the eyeball. My experience covers a reasonable number of cases, and several years ago I took the trouble to write to eight or ten patients previously operated upon for malignant disease of the choroid and orbit and prepared a short paper on the subject. I found that the majority of them had fully recovered. One of the earliest cases I had was a lady aged sixty-two years; she was operated upon twenty years ago and is now over eighty years old. She had a melano-sarcoma which did not involve the orbit but had perforated the sclera. The earlier operation is performed the better the prognosis. In the case reported by Dr. Pfingst the operation was performed late, and I would have exenterated the orbit. I believe that is the proper course to pursue.

Primary sarcoma of the orbit must be rather rare. I have seen only two or three such cases. Perhaps the most interesting occurred in a lady twenty years of age from Southern Kentucky. She had a good eye, her vision being 20-50. She had marked engorgement of the retinal veins. The eyeball was pushed forward and evidently there was a growth behind it. Her brother was a physician and a very intelligent gentleman. I recommended that we get the opinion of another specialist, that I believed the girl had a sarcoma of the orbit, and terrible as it seemed to remove an eye still capable of vision in a girl of twenty, that was probably the only chance to save her life. The late Dr. J. M. Ray saw the patient and agreed in the diagnosis and the proposed operation. I removed the eye and exenterated the orbit leaving the lids which were not involved. Microscopic examination of the tumor was made and pronounced positively a sarcoma. Primary sarcoma of the orbit is generally fatal and I so informed the family. That patient is living today, and the operation was performed over twelve years ago. It may be interesting to state that three or four years after I had performed this most disfiguring and heroic operation, the patient returned and said she "must have a glass eye." I told her I did not see how it would be possible to introduce a glass eye, as the lids had become adherent; but she insisted that the attempt be made. I then dissected the lids loose, —She had some connective tissue that partially filled the orbit,—and followed a suggestion I had seen in a medical journal of skin grafting on an artificial eye by placing the grafts around the glass eye. I took skin grafts from the patient's arm and placed them over the glass eye and inserted it in the socket the skin grafts holding it in place. About that time I left the city for a short trip and turned the patient over to someone else to look after, fully expecting when I returned to find that the glass eye had sloughed out; but to my great surprise the skin grafts had become adherent and the artificial eye had remained in position. It had no motion and cosmetically did not seem to be a great success.

A drug clerk twenty years old came to me from Harrodsburg, Kentucky, with a lump in his eyelid extending backward toward the orbit. I thought he had a sarcoma, but as it was not intra-ocular, I suggested that the opinion of a general surgeon might be better than that of an oculist, because it really did not involve the interior of the eye. I had him see two distinguished Louisville surgeons who differed widely in their suggestions. The first said he believed he would remove the tumor, leaving the eyeball for a time at least, and see if this would be successful. The second said if he were going to operate he would remove everything backward to the optic foramen.

My views were in line with those of the first surgeon, and his advice was followed. An incision was made in the eyelid and the tumor, which was about the size of a chestnut, removed. I hoped in this way to effect a cure. For several months the patient seemed to be entirely relieved, then there was a recurrence in the orbit which pushed the eyeball forward and produced other typical manifestations of a recurring sarcoma, which microscopic examination had shown it to be. I then exenterated the orbit, which I think now should have been done at the original operation, and that the opinion of the second surgeon

was the best. The boy lived for several months after the second operation and finally died of general exhaustion. After exenteration of the orbit I used the electric cautery a few times, but doubt if any benefit was thus derived.

I have seen many cases of sarcoma of the choroid. The most interesting one I can recall was in a young lady seen with the late Dr. J. M. Ray. We both advised immediate enucleation, but the girl declined. She went home and retained her eye. The girl had a sarcoma of the choroid, she had irido-cyclitis that produced a shrinking of the eyeball as in Dr. Pfingst's case, the tumor mass pushed the eyeball forward. A year or two later she died with symptoms indicating metastasis in the liver.

Of course I may be wrong, but the history of the case reported by Dr. Pfingst seems to me typical of sarcoma of the choroid with secondary glaucoma, irido-cyclitis and secondary involvement of the orbit, the tumor pushing the shrunken eyeball forward; and I must say with all due respect to the opinion of Dr. Pfingst that the weight of surgical opinion in these cases is to exenterate the orbit; this is productive of the best results and the procedure usually recommended.

Some time ago I saw a case at autopsy where the patient before death had complained of symptoms mainly abdominal. An interesting feature was that six or eight months previously the patient's eye had been removed because of the presence of a malignant tumor. At necropsy the liver was enormously enlarged by metastatic growths. This is merely mentioned to emphasize what Dr. Dabney has said, i.e., that the most of these patients die from metastasis in the liver.

Louis Frank: I would like to ask Dr. Pfingst and Dr. Dabney if the X-ray or radium would have any effect in preventing recurrence after removal of malignant tumors involving the orbit. We have seen some remarkable results in malignancy in other anatomic situations following the use of radium; and in all such cases operated upon recently we have subjected the tumor area to radium emanations.

A. O. Pfingst, (closing): Perhaps I should apologize to the society for reporting the case before the specimen had been examined; but I wanted to exhibit the specimen in its fresh state to show the relationship of the eyeball to the surrounding tissues.

While the microscope will have to determine whether the neoplasm originated in the eyeball, it would seem that the tumor originated in the posterior portion of the orbit as it surrounded the optic nerve from the optic foramen to a position above the eyeball and as the eyeball was apparently free of disease.

My determination to enucleate and not eviscerate was as before stated based upon the fact that the growth had already extended to the optic foramen.

Regarding the use of radium in cases of this kind: I have not practiced evisceration since we knew anything of the action of radium; but based upon reports of radium used in other regions I would approve of its use in a case of this kind. I believe this man should be given the benefit of treatment either by means of radium or the X-ray.

TREATMENT OF INFECTED COMMINUTED COMPOUND FRACTURES.*

By I. A. Arnold, Louisville.

The treatment of fractures is an old subject, especially the simple types; but the treatment of infected bones has hitherto been insufficiently discussed. There are many current opinions, with which you are familiar, regarding what to do with infected bones; therefore, it is needless for me to discuss the details. I shall merely give my personal opinion based upon a few hundred cases which came under my observation while serving the French in the "bone center" at Evreux.

I am frank to say that my opinion has not been indorsed by the profession in general, but it has been indorsed by all those who have seen the ultimate results of the work I shall describe. Furthermore, the method is not original with me, it was tried by numerous operators in former years and discarded,—not that the method was wrong, but I believe the conclusions were premature. Moreover, direct questioning of those with whom I came in contact and who bitterly opposed the method of treatment to be described, disclosed the fact that they had personally done little if any work of this kind, and condemned it upon opinions handed down from one doctor to another. I was prone to do likewise until assigned to the "bone center" where I became associated with Dr. Ralph Fitch, of Rochester, N. Y., who was in command of the hospital. He showed me the work he had been doing at the hospital during a period of three years, and after noting the results obtained, I was convinced (as were others who saw the work) that his methods were correct. The subject will be considered under the following three headings:

First: The treatment of infected compound fractures which need no special appliance, drainage and immobilization being sufficient;

Second: Infected bones with considerable

*Read before the Jefferson County Medical Society.

loss of substance, where bone grafting later becomes necessary;

Third: Those cases which must be plated or wired in the presence of infection.

In the first class we have a fracture with little if any deformity or displacement and no sequestrum. In such cases free drainage is provided and the wound kept open so long as there is evidence of existing infection. Complete immobilization of the leg or arm is effected by the use of a Thomas splint with extension in conjunction with the Balkan frame, which makes the parts more accessible for treatment and gives greater comfort to the patient than any other appliance I have used. After all evidence of infection has disappeared, and microscopic examination shows no bacteria other than staphylococci or bacillus proteus, secondary suture is practiced and the limb replaced in the splint where it is allowed to remain until union is solid.

In badly infected fractures where there is considerable loss of substance, a Thomas splint is applied with the limb in slight extension, just enough to avoid muscular contraction, thus giving the patient the greatest degree of comfort. It is unnecessary to completely immobilize the part, but normal alignment should be secured. In leg fracture it is necessary to apply a brace to hold the foot at right angles and keep the toes from drooping. I have seen some very ugly deformities the result of not keeping the foot in proper position. Some surgeons apply adhesive plaster to the sole of the foot, which in turn is attached to a pulley on a Balkan frame; but I have found this unsatisfactory, as the adhesive plaster soon becomes twisted and "rides" between the toes. While it keeps the foot at right angles, the toes are allowed to droop which is exceedingly troublesome when the patient begins to walk, and often a surgical operation is required to overcome the deformity. To prevent this I use a piece of board fastened to the sole of the foot by means of adhesive plaster, the details of which I will not attempt to describe as it would require too much time.

After this position has been maintained for some time, with the Carrel-Dakin treatment and free drainage, should there be evidence that the infection is being continued by necrotic bone, the patient is operated upon, all sequestrum and bone fragments likely to become necrotic being removed. Free (open) drainage is established and the same treatment as before operation is continued until all evidence of infection has subsided and the microscope shows that the field is clean. It is advisable to perform secondary suture and thus eliminate scar tissue preparatory to bone grafting six to twelve months later. This I consider very necessary to the ultimate success of the bone graft, as we know scar tissue must be removed before the bone can receive proper nourishment, which is an essential point in the life of the graft. It also permits the application of a light cast about ten days after suture, thereby enabling the patient to be up and about, which not only increases his physical comfort but his general condition will be thereby much improved.

It will be noted that I have not gone into minute details in the foregoing, as I believe the principle described has been generally accepted. Furthermore, I shall discuss in greater detail the following class of cases, as it is here that much divergence of opinion exists.

The plating or wiring of bones in the presence of infection unquestionably has a place in surgery, although the indiscriminate plating of fractures in the presence of infection is justly condemned. After plating a recent fracture which is badly infected, with the circulation to the area greatly disturbed (not sufficient time having elapsed for collateral circulation to be established through the lacerated and bruised tissues), with vitality of the entire area markedly lowered, one need anticipate nothing more than failure. When the plate is removed six or seven weeks later the screws in the dead bone will be found very tight; if with the chisel and mallet the bone be lightly "tapped," it will be found that a bone cast of the ends of both fragments will easily come away with the plate. I have seen such cases successfully plated the second time. I will not say that the first plate caused any more destruction of bone than would have occurred without the plate, neither will I say that the patient was damaged excepting to subject him to prolonged suppuration; but the plating was a failure because the surgeon did not wait until nature had come to his rescue and the line of demarcation between healthy and necrotic bone could be clearly distinguished.

When there exists a compound infected fracture which it is evident cannot be held in proper position, and where deformity and poor function are likely to result, plating is unquestionably the proper plan of procedure. The time for plating I consider important. It has been shown that the plating of recent infected fractures is a failure. From six to eight weeks after infection has developed is the most favorable time to plate. This may not be true in all instances, but it represents a fair average. However, it is to be understood that during the six or eight weeks free drainage should be established, the Carrel-Dakin treatment used, and the limb held in position by a Thomas splint, which I prefer

to any other appliance. By this time, through the efforts of nature the soft structures are in better condition, and the limit of demarcation of necrotic bone is well established.

In making the debridgement for drainage care should be exercised that no more of the bone be exposed than is absolutely necessary, as bone exposed for any length of time becomes necrotic. It is also advisable that rubber tubes used be wrapped with gauze lest they come in contact with the bone and other tissues.

After instituting the treatment already mentioned, the original incision should be sufficiently enlarged to enable further work to be accomplished with ease. All scar tissue should be removed. This is not only the proper thing to do, but it relieves tension and thereby makes the operative field more accessible. All sequestra and callus, also any fragments of bone of which there is any doubt about the viability should be removed. All ivory-looking bone must be removed from the ends of the fragments to be plated, leaving a bleeding area of bone beyond the line of demarcation. The canals should be cleansed of all fibrous tissue until healthy bone marrow is reached. In most cases the fragments will not fit closely enough to obstruct drainage, but if they should a drainage opening should be made by use of the chisel. This is important otherwise osteomyelitis is likely to develop. The plate should be applied in such manner that it will not interfere with coaptation of the soft structures and the bone at the point where first union is expected. Failure to do this will cause destruction of the bony fragments.

In selecting the plate one as long as the anatomy of the parts will permit should be used,—preferably a six-screw plate,—not inserting the two screws nearest the ends of the fractured bone. Apparently this may seem a minor step, but I have seen cases where the bone became necrotic because screws were placed near the line of fracture. Partially close the incision, covering as much of the bone as possible without obstructing drainage. Use Carrel-Dakin solution with complete immobilization with plaster of Paris cast, a "spanner" being embedded in the cast to afford more strength to the cast in the region of the window through which daily dressings are made.

Another thing to be remembered is that the large opening in the cast may permit the leg to herniate through this space thus producing curvature at the site of fracture. This can easily be prevented by using one or two ordinary arm splints.

The plates are removed as soon as the bones are sufficiently united to prevent displacement of the fragments. This can be done without an anesthetic and without removing the cast. In removing plates I have found that in all cases the screws will be loose excepting in dead bone. Continue the Carrel-Dakin solution until infection has subsided, then perform secondary suture. As a rule within eight or ten weeks union will have become sufficiently solid to permit of removing the cast with a serviceable limb which in former days would have been amputated.

I have referred to the Carrel-Dakin treatment a number of times. In military practice we used this as a routine measure and obtained excellent results. Whether these results can be attributed to the Carrel-Dakin solution or to radical surgery is a question. I have seen infections fail to subside under the Carrel-Dakin treatment which readily yielded to a 70 per cent alcohol solution. Another important item in conjunction with the treatment is the administration of lime salts to the patient.

It may seem that I have gone into too much minutiae in connection with the treatment, but having carefully observed and followed several hundred cases I have had ample opportunity to discern between the agents producing success and failure.

In conclusion I want to say there is no other branch of surgery in which there is greater need of painstaking execution of detail treatment than in bone surgery.

DISCUSSION:

L. W. Neblett: I had the pleasure of seeing many of the patients treated by Dr. Arnold. We had the rather unusual opportunity of observing and treating only fracture cases in the hospital where we were located. Dr. Fitch, of Rochester, N. Y., had been in charge of the hospital for about two years when we arrived, and the French thought well of his work. The cases we received were of the worst class, all of them being infected.

We saw over eight hundred compound fractures of the femur and all were infected. In the majority of them plating or wiring became necessary, there being no other way to maintain the fragments in correct apposition. We had a number of cases where fracture through the great trochanter and super-condyle had occurred at the same time in the same leg. We thus had two fractures and it was almost impossible to hold either one in proper position without plating; that is, while one was being reduced the other would be forced out of place. They were plated in the presence of infection, which is contrary to Lane's idea; in fact, he says it can never be successfully accomplished.

The most important factors in successful bone

plating are: (a) careful cleansing of the canal before applying the plates, (b) placing the screws far enough away from the ends of the bone, and (c) removing all detached and useless bony fragments. These will become necrotic and slough if not removed, and thus prevent union of the fractured bone. It is well known that a week or ten days after fracture the canal will close by the formation of fibrous tissue which prevents extrusion of the marrow and union will not occur. In all such cases our procedure was to thoroughly curette the canal thus removing all fibrous tissue, and to extract all detached spicules of bone. Of course all attached bony fragments were conserved; even a single splinter attached to one side was preserved and plated against the sound femur practically the same as a bone graft, the plate being applied on the opposite side of the bone. Sometimes two or more inches of the femur could thus be saved and shortening prevented; quite a number of cases were successfully treated in that way.

Dr. Arnold did not sufficiently emphasize the importance of secondary suture in the class of cases under consideration. We had patients with compound fractures where infection was overcome and secondary suture practiced within eight to twelve days after admission, thus converting a compound into a simple fracture, which I consider more or less remarkable; and of course this simplified our work to a great extent.

The procedure of plating fractures has been fought against time and time again because of the supposed dangers of infection. In our work we saw very little difference in the amount of infection and bone destruction between plated fractures and those not plated. One disadvantage in plating infected fractures is that a cast must be applied to maintain position and the wound must be treated through an opening in the cast; but even with a Thomas splint in changing the dressings there is danger of displacing the fragments by disturbing the position of the leg.

It may be worthy of note that after the plating operation we found it advisable to change the dressings frequently. In many instances we dressed wounds twice daily. We used two or three, sometimes half a dozen, small rubber tubes or catheters through which we injected from one-fourth to one-half ounce of Dakin solution with a bulb syringe. We discontinued the siphon method because in many cases we found the catheter became obstructed and we did not know whether the fluid was going into the wound or not; but with the bulb syringe this could always be determined.

I believe frequent changes of dressings had much to do with the success of our treatment. There can be no doubt that in a great many instances the plating of fractures of the femur will be found necessary to secure the best results. where fracture occurred near the joint and there was no available room for applying the plate, we introduce wire length-wise of the canal and let it emerge in the wound. We saw very few simple fractures during our service.

W. B. Owen: Fortunately in civil practice we encounter few compound, comminuted, infected fractures; but the more fractures of the femur I see the more am I convinced that the open method of treatment is preferable. Heretofore, under the closed method of treatment, we considered ourselves fortunate and thought we had secured a good result in fracture of the femur when union was obtained with not more than half an inch shortening; but we now know that is primarily an admission of defeat. If the operative procedure is executed under proper precautions, it is seldom that infection occurs in uncomplicated fracture of the femur treated by the open method. Of course we all realize the dangers and difficulties which beset us in the treatment of all varieties of fracture, but whether we acquire a perfect result or otherwise we must always strive to secure a satisfactory outcome.

In infected fractures only two things have to be considered, viz., (a) free drainage, and (b) fixation. The Thomas splint is one of the best we have for use in leg fractures. It is simple, cheap and efficient; it affords ample protection and provides the requisite fixation. However, as Dr. Arnold has said, there is always the danger of drop-foot and extreme equinus unless a right-angle splint is used to prevent this.

Of course every surgeon has his own method of dealing with fractures, and I think he should use the method with which he is most familiar and with which he has secured the best results. Personally I prefer the plaster cast. By this plan proper fixation and position are assured, and ample provision may be provided for drainage; right-angle position of the foot is maintained by the cast, and the wound can be dressed as frequently as may seem necessary without disturbing the fixed position of the limb.

Without intending to criticise the work of other surgeons, I wish to express my disapproval of the Lane plate. Equally good results may be secured by the so-called "gimlet method" of fixation devised by Dr. H. Horace Grant, of Louisville, and extensively used both here and elsewhere. Wherever this method can be used I prefer it to other means of securing fixation. The gimlets are easily applied and removal does not necessitate interfering with the wound. Of course, as Dr. Neblett has said, we all appreciate the necessity of removing all particles of infected material, including bony and soft tissues, before allowing the wound to heal.

R. T. Pirtle: I had the opportunity of treating a large number of cases such as those described by Dr. Arnold while I was stationed in the

largest hospital center of the American Expeditionary Forces. There were twenty-eight thousand patients in the hospital at one time. No mechanical methods of fixation were used in the treatment of fractured bones. We first reduced the fracture and then established free drainage. To accomplish this we had to make an incision on the posterior side of the thigh in fractures of the femur. The patients arrived at our hospital anywhere from three to ten days after being wounded, sometimes they had been dressed only once, and all the wounds were infected.

We reduced our fractures and applied Thomas splints with pressure pads both inside and out which kept them in very good alignment. We had an X-ray machine and took lateral and posterior views of the bones in every fracture both before and after reduction.

I saw in the Edmington Hospital, London (a 2,000 bed hospital), about five hundred cases of fracture of the femur. All these cases were treated by free drainage, not a single case was plated; the caliper traction was used especially in fracture of the lower third, weight of ten to twenty pounds being used for extension. The knee was kept at right angles by means of an auxiliary splint so the leg could be moved. In this way the patient was kept very comfortable. Union of the fractured bones occurred in from six weeks to three months.

One objection I have noted to the Thomas splint is that after union of the fracture has occurred rotation of motion in the knee joint must be secured by massage and other suitable measures, and this is sometimes not readily accomplished. We experienced considerable trouble in this class of cases where the Thomas splint was used.

The greatest trouble we had with compound infected fractures of the femur was that they healed too rapidly and sinuses developed later in a great many cases. Many patients in that condition were shipped to the states, and probably the surgeons here are now removing bony sequestra and treating the resulting sinuses.

J. B. Richardson, Jr.: The essayist has spoken rather enthusiastically of the use of Dakin solution in the treatment of infected fractures. I had the opportunity of observing many such cases during my military service abroad. Practically all the cases were infected, and in attempting to limit the infection various solutions were used. I came to the conclusion that Dakin's fluid was no more successful than boric acid solution or even normal saline. I am positive that infection subsided as rapidly with one as the other. However, it must be admitted that our methods of using the Dakin treatment were very crude because of the vast number of patients to be treated and the limited number of assistants. We introduced the solution into the wound by means of a syringe which, according to Carrel's idea is not the proper procedure; but we were unprepared and it was impossible for us to employ methods we knew should be used.

Another definite conclusion was that in fractures the dressings are often changed too frequently. It was noted particularly that in cases with longer intervals between dressings the infection subsides much sooner. Whether this is contrary to general experience I do not know. The opinion of one man in military practice is of little value because patients were not under observation for a sufficient length of time. They came to the hospital for operation anywhere from two to seven days after being injured, some of them having had no dressing or first aid treatment. So you can well imagine what the conditions were when they reached us.

Dr. Owen has referred to the gimlet method of producing fixation in fractures: If gimlets are to be used they should be applied at considerable distance from the end of the fractured bone. As Dr. Arnold has said, the further away from the fracture site screws are inserted the better the results are likely to be.

While the discussion of this subject is of considerable interest, I do not believe it is going to be of any practical value in civil practice.

C. G. Forsee: I would like to ask Dr. Arnold how many patients with infected fracture wounds developed general sepsis and died; also the number of amputations which had to be performed following such injuries. In civil practice we frequently see fractures where amputation seems to be the only measure which will give the patient a chance for his life, and this is also most likely true in military practice.

R. T. Pirtle: Dr. Arnold mentioned the Carrel-Dakin method of sterilizing infected fracture wounds. I would like to inquire whether he also used the neutral soap treatment? In my wanderings around France I visited Chateau Reaux where Hospital Unit Number Nine was located, and had the pleasure of seeing Major Hawley, the commanding officer, a strictly scientific and excellent surgeon. His method of using the Carrel-Dakin treatment was the best that I saw over there. He thoroughly scrubbed the external and internal surface of the wound with neutral (Castile) soap, then used Dakin solution for cleansing purposes. His wounds showed no scale nor accumulation of scaly pus around them. In the hospital where I was stationed we had been in the habit of curetting the wounds and using the Dakin solution afterward. We later adopted the method used by Major Hawley and better results were obtained by the neutral soap treatment than any other means. The wounds were thoroughly scrubbed with neutral soap and the Dakin solution then used as a mechanical cleansing agent.

I. A. Arnold, (closing): In answer to Dr. Pirtle: Two or three of the surgeons in the hos-

pital where I was located used soap in cleansing fracture wounds, but the method was not adopted as routine. It seemed to improve the appearance of the wound, but the mechanical cleansing with Dakin solution was of greater advantage in my opinion. Dakin solution removes the necrotic tissue, but whether or not it actually destroys bacteria I do not know. And whether the good results we obtained were due to Dakin solution or to radical surgery is a question. The wounds were widely incised and free drainage established, and I believe the results were due more to radical surgery than to the Dakin solution. Another feature worthy of mention is that we saw a number of secondary hemorrhages following use of the Dakin solution where the femoral artery had been injured. Why the infection in some cases subsided under the use of alcoholic solutions after Dakin solution had failed I do not know.

The gimlets mentioned by Dr. Owen would probably be all right if applied far enough from the fracture site. However, we had no such appliance in the hospital where I was located. None of our patients complained of pain where the Thomas splint was used.

I did not see a clean fracture wound in my service. The patients came from other hospitals anywhere from a week to three years after being wounded. We had the opportunity of observing our patients over a long period of time as they were kept in the hospital until they were well, which gave us a chance to check our results. Whether complications or sequelae developed later I cannot say, but I see no reason why osteomyelitis should occur after free drainage and proper union of the fractured bones.

Caliper splints were used in quite a number of our cases, but they were difficult to maintain in proper position and pain was excruciating in every cases. With the caliper splint there is danger of the fragment being pulled upward or downward whenever the knee is moved.

As to the number of amputations: I cannot recall more than eight or ten leg amputations during my service, and some of these were amputated before the patients were admitted to the hospital; in most instances one leg had been amputated and the other fractured. In almost every case where we amputated the leg the femoral artery had been ligated to control hemorrhage before the patient arrived at the hospital. In two or three arm amputations so much of the muscle-spiral nerve had been destroyed between the fragments that we thought amputation was preferable to attempting to bone graft paralyzed arms.

Not more than four or five patients died from general sepsis during my service.

OPERATION FOR THYROID TUMOR.*

By J. Garland Sherrill, Louisville.

CASE REPORT.

On March 12th, 1919, I operated upon Mrs. J. K., aged fifty-seven years, who, in September, 1918, suddenly began suffering from dyspnea after a paroxysm of coughing. She said she "felt as if she had a small lump in her throat, and made desperate efforts to cough it up." Following that she had gradual and rather rapidly increasing pressure on the trachea which caused dyspnea and considerable distress. She had not been able to breathe when in the recumbent position for some time.

The patient had been under the care of several different physicians since the beginning of her ailment, and after an X-ray examination (fluoroscope and skiagram) had been made, the opinion was expressed by both the radiographer and her medical attendant that she had an aneurism. She continued to suffer and at the time I first saw her several days ago she stated "that she would be all right if she could reach down and pull out the thing that was pressing on her trachea."

She was a short, fleshy woman with a short neck, on each side of which was a soft swelling such as is frequently noted in women of this type. There was considerable dyspnea probably produced partly by the high position of the lung and partly by efforts at deep inspiration and straining. The swelling was tympanitic on percussion, there was but little protrusion above the sternum, there was a rather peculiar line of induration which extended almost completely across the neck reaching to the tympanitic area mentioned.

There was no tracheal tugging nor expansile pulsation, in fact there was no pulsation that I could detect, and there was no bruit over any portion of the region involved. There was dullness over the sternum extending a short distance on either side and downward below the manubrium. The patient's general health had been good, her physique was normal, she had lost no flesh.

The patient was referred to me by Dr. Carl Weidner, Jr., under whose care she was in the absence of his father. Neither Dr. Weidner, Sr., Dr. Weidner, Jr., nor myself thought she had an aneurism. It seemed to me from the rather sudden onset that there was a rapidly growing thyroid tumor, the result of inflammatory change in a pre-existing incarcerated thyroid, or malignancy in a similarly placed thyroid gland.

We again examined her with the X-ray, the

*Clinical report before the Louisville Medico Chirurgical Society.

first examination not being entirely satisfactory. The only evidence of pulsation we could discover in the mass was a barely perceptible movement at the edge of the growth. The shape was well outlined and the mass extended downward to about the point described in speaking of the dullness. By this time Dr. B. W. Bayless had returned to the city, and after making an X-ray examination he gave it as his opinion that it was not an aneurism. That strengthened the position we had previously taken that there was an intra thoracic or substernal enlarged thyroid gland probably malignant which caused the trouble; and she was so insistent that an effort be made to relieve her that I operated day before yesterday.

She took ether very nicely and the thyroid gland was partially enucleated from its capsule, because removal of the entire capsule and gland would have been hazardous on account of the difficulty in dissecting the tissues lower in the chest. In opening the capsule in this way some of the colloid material was allowed to escape, which I generally prefer not to happen on account of the danger of toxemia which may result from its absorption. However, the patient had no fever, tachycardia nor any of the other usual symptoms of toxemia.

The case is extremely interesting from a diagnostic standpoint, not particularly so from the viewpoint of the surgical procedure, excepting that the operation was more difficult than for a simple goiter because of the very thick and short neck and the fact that we could not extend her neck thoroughly without causing an increase in the dyspnea. She had a little difficulty in breathing during the operation which soon disappeared.

I had hoped to have a report to-night from the pathologist, Dr. Stuart Graves, as to the character of the tumor, but sufficient sections have not been made to justify an opinion as to what the tissue really is.

I thought the case was worthy of mention because it appears unusual, particularly with reference to its sudden onset. I do not believe, however, that the suddenness of the onset had any especial bearing on the case other than that, as a result of coughing there occurred some irritation about the throat, and she then noted the dyspnea more than she would have done otherwise.

The operation consisted in removing a portion of both lobes of the thyroid leaving the capsule and para-thyroids, ligating both the superior and inferior thyroid arteries on either side of the isthmus, some of the tissues about the isthmus and also a mass beneath the sternum being left intact. There was no difficulty about controlling the hemorrhage. Drainage was practiced in this case because of the amount of colloid material which escaped into the wound, otherwise I doubt whether there is any real necessity for drainage in such cases.

I believe this is a cystic goiter which has undergone degeneration, there being in the specimen a considerable amount of grayish colored necrotic tissue. Dr. Weidner was inclined to believe it was malignant. While it has some of the physical appearance of a malignant goiter, to my mind it is not characteristic.

DISCUSSION:

B. W. Bayless: The X-ray showed that this tumor extended downward to the aorta. It was a non-pulsating tumor. We could see the pulsating descending arch of the aorta on the right side quite distinctly. There seemed to be quite a large cavity above the apex of the lung.

H. H. Grant: I think it quite probable from the description given by Dr. Sherrill that the tumor has undergone malignant degeneration, and the probability is that even though the patient temporarily improves there will later be a recurrence in the capsule. It would seem to me, however, that his operative steps were entirely proper. It would be exceedingly difficult to remove all the diseased tissue under circumstances such as he has described without extensive dissection.

Colloid degeneration in a cystic goiter nearly always means malignancy, and I think the prognosis is unfavorable.

Stuart Graves: I have been much interested in the comments of the surgeons upon this case. The thyroid is notoriously a difficult specimen upon which to make a histological diagnosis. Study of the specimen was rendered more difficult by the fact that there was a great deal of degeneration. There was a distinct abscess in one portion of the specimen, 25 to 30 mm. in diameter. The remainder of the specimen showed markedly acute hemorrhage, inflammation which made it difficult to come to any conclusion from the histologic picture. Moreover, a thyroid tumor which histologically may appear perfectly normal may eventually metastasize. On the other hand, such tumors may appear markedly hyperplastic and at the same time show no real neoplastic tendency.

Histologically goiters are of two types but both are usually more or less mixed. In the so-called cystic goiter the alveoli are much distended but lined with a single layer of epithelial cells. The colloid is markedly increased. A goiter of this type usually gives hypo-secretion because there is less secreting tissue. When escape of the secretion becomes obstructed more or less alveolar formation occurs. The so-called parenchymatous goiter shows marked hyperplasia of the epithelial cells and less accumulation of colloid material.

In that type there is hyper-secretion with the usual symptoms—tachycardia, nervous manifestations, etc., that accompany hyperthyroidism.

So far as can be determined from six or eight sections made from this specimen it appears to be malignant, but thus far I have been unable to find any typical areas of carcinomatous tissue. There are a great many epithelial cells in typical relation to each other and mitotic figures in these large undifferential cells are fairly numerous.

I. A. Lederman: I would like to ask Dr. Sherrill whether there was any change in the patient's voice, that is any laryngeal symptoms. The reason for asking this is that it would not be surprising if one or both recurrent laryngeal nerves were affected by the growth.

J. G. Sherrill, (closing): I am glad Dr. Lederman asked about laryngeal symptoms, because I neglected to mention that feature in my report. This woman did have a slight "brassy voice" which is so frequently noted in goiter and also in aneurism in this region. Undoubtedly there was pressure on both recurrent laryngeal nerves.

There was also another condition to be differentiated, i.e., the sudden feeling of pressure in the neck suggested a diverticulum, but the X-ray examination excluded both diverticulum and aneurism.

I wish to emphasize the value of the X-ray in such cases and in many others where the diagnosis seems doubtful. It is a most valuable diagnostic procedure which has come to our aid in recent years. I believe all modern methods of precision are of value and none of them should be neglected. Laboratory examinations are also of value and we should use them more frequently; but we must always remember that the clinical picture is of the greatest importance, and if the laboratory findings do not confirm the clinical picture we must be cautious about arriving at a conclusion.

Placenta Previa.—Nijhoff analyzes the experiences in 160 cases of placenta previa at Groningen since 1898. The mortality of the women was 8.2 per cent. and in four of the thirteen fatal cases the woman was nearly exsanguinated when first seen. The death rate of the children was 44 per cent. These figures compare favorably with Doederlein's compilation of 5,615 cases with 8.5 per cent. mortality for the mothers and 54 per cent. for the children. The lessons learned from this material impress the advantages of cesarean section in serious cases with profuse hemorrhage at the beginning of the first stage of labor. Otherwise it is better to follow the old method of rupturing the membranes, with version, when the os is well dilated. We may well be content if we can get the mortality of the mothers reduced to 5 or 6 per cent. and that of the children to 25 per cent. The details of his cases are tabulated.

MALIGNANT TUMOR OF THYROID.*

By Stuart Graves, Louisville.

Malignant tumor of the thyroid is fairly uncommon. It is usually of epithelial origin and such a tumor comes under the heading of carcinoma. The tumor exhibited herewith was presented to the Museum of the Pathological Department of the Medical School by Dr. Carl Weidner, Sr., who removed it post-mortem. The patient had been operated upon by Dr. J. Garland Sherrill a few days before and from the specimen submitted at that time a microscopical diagnosis of malignant tumor of the thyroid was made.

The history of the case was presented by Dr. Sherrill at the last meeting of this society. It is being shown this time because of its connection with that recent report and will be the subject of more study later.

DISCUSSION:

I. A. Lederman: I was asked by Dr. Sherrill to see the patient from whom the specimen referred to was removed, to consider the advisability of a tracheotomy. The woman was then in great distress, she was cyanotic dyspneic, and evidently obstruction existed below the larynx.

After fully considering the matter we agreed that tracheotomy should be performed, although it was recognized that the case was hopeless. When Dr. Sherrill reopened the operative wound in the neck which had healed, considerable sanguinolent fluid escaped. We worked rapidly without an anesthetic, with the patient in a semi-recumbent position. We found enormous infiltration of the trachea which the post-mortem specimen also shows. There were no land-marks and the trachea could not be distinguished from the surrounding tissues. The operation was rapidly completed, the trachea being located by the sense of touch, and the tracheotomy tube introduced through the crico-thyroid membrane.

Pressure must have existed below the tracheal opening, as the patient obtained only slight temporary relief from the operation, and death occurred after a few hours.

Radium Treatment of Superficial Cancer.—Sierra relates that he has realized a complete cure in the last eight years in all but three of the more than 100 cases of epithelioma of the skin in which he has applied radium treatment. The three refractory cases had been previously given roentgen treatment and had had a radiodermatitis. He gives the details of a few typical cases, and warns that roentgen treatment may aggravate the cancer, and it is then extremely difficult to arrest its course.

*Read by H. E. Tuley before the Louisville Medico Chirurgical Society.

ACUTE MANIC DEPRESSIVE PSYCHOSIS; REPORT OF A CASE.*

By W. E. Gardner, Louisville.

The girl before us is seventeen years of age. She was sent from the county jail to the Louisville Public Health Hospital on March 19th, 1919, where she remained until the 30th. At that time no history could be obtained because of her disturbed mental condition. She became worse and as it was impracticable to care for her in the hospital ward, she was returned to the jail.

She was re-admitted to the hospital on the 4th of April. We were still unable then to elicit anything definite from the patient, but her mother arrived here shortly afterward and has given us a few items in connection with the family and personal history which are significant.

The most important point is the evidence of hereditary influence; that is, the distinct history of psychosis in this girl's family. Her father was at one time confined in an insane asylum; her grandfather, one uncle, and two great uncles, committed suicide. Her parents have been separated for several years. She was born in Kentucky and so long as her father and mother were together they lived in Kentucky. Her mother has been living in Chicago, Illinois, for a number of years and the patient has been making her home there.

Last November this girl married a soldier, and the mother believes she was mentally disturbed at that time. She was restless, had an exaggerated ego, wanted to wear fine clothes, was prone to run away from home, and probably had mild manic excitement as early as November of 1918.

About the first of March, 1919, she was "picked up" on the street in Louisville in a disturbed mental state and was placed in jail. It seems that her husband is no longer in the army, but she has not seen him for some time nor has she had any recent communication from him.

This young woman gives no history of any serious physical illness, nor are there any indications of any organic disease. In July, 1917, while attending school she suffered from a nervous break-down, and was in an apathetic condition until about the first of the following October. Thereafter she seemed apparently normal until March, 1919, when her acute excitement began, although the mother thinks she was becoming mentally unstable back in November, 1918.

No Wassermann test has been made in this case, because there seemed no especial reason for it. Examination shows no stigmata of degeneration; her face is symmetrical; her ears and lips are well formed; all reflexes somewhat exaggerated.

When first admitted to the hospital (March, 1919) a tentative diagnosis of dementia praecox was made. However, on account of her exultation, her rapid flight of ideas, and especially the family history, I believe she has acute manic depressive psychosis; that is, a psychosis in which heredity plays an important part. It is said that seventy-five per cent. of the manic psychoses show direct hereditary influences. In dementia praecox the hereditary influence does not play such an important part. It is recognized, however, that this girl is at the age where she might suffer from dementia praecox or even acute confusional psychosis. In the history we have been able to obtain there is nothing to indicate that she has undergone any exhaustive or infectious disease which might tend to produce the confusional type of psychosis. While such cases sometimes show acute manic excitement, this appears more like acute manic depressive psychosis, the family history, the exaltation, the exaggerated ego, etc., being significant.

All patients of this class are highly erotic, and I am not surprised that this girl should have gotten married during a period of erotic excitement. She does not impress one as being an imbecile. Girls of this type are prone to marry the first man who asks them. She gives the history of being normal while attending school, until the nervous break-down occurred; and yet under some excitement she married a man whom she had known but a short time, and most likely the marriage will be unfortunate.

While in the hospital and also in the jail she repeatedly tore all clothing from her body, and insisted upon remaining naked. She is very irritable, which is characteristic of patients of this type, she objects to any attempt to control her, she becomes very boisterous at times, and complains of the nurse, the physician, or anybody who shows and disposition to control her. It will be noted that she talks continually (logorrhea) and on that account has become very hoarse. At intervals she will converse seriously and appear bright mentally, the next moment she will wander decidedly in her conversation. She had at no time exhibited distinct atatonic symptoms, and at times her mind appears fairly clear. It is atypical manic type with exaltation. She shows more mental disturbance during the day than at night.

Necropsy reveals practically nothing in cases of this kind, although it is claimed the symptoms are due to some toxic process in-

*Clinical report with exhibition of the patient before the Louisville Medico-Chirurgical Society.

volving the larger motor neurons; whereas in melancholia the smaller motor neurons are said to be involved.

The prognosis is good for recovery from the acute attack, but unfavorable so far as recurrence is concerned. The earlier in life the symptoms develop, the better the prospect for recovery, but the greater the danger of recurrence.

Proper nutrition and sleep are important factors in the management of these cases. I believe it is better to restrain such patients in bed than to have them "climbing" around the room and destroying everything. The more quiet they are kept, the quicker they recover. Stoddard recommends sulphonal given over a long period,—twenty grains every evening for three months if necessary. He claims that is a most successful method of treatment in the acute manias. After relaxation the patient becomes quiet and goes to sleep. I have given sulphonal in several cases over long periods of time, and after the patient recovered the drug was discontinued without any ill effects.

This patient may recover and not have another attack for five or ten years, but as already stated the earlier in life the manic attack occurs the greater the likelihood of recurrence. Any exhaustive illness, infectious disease, mental worry, or depressive influence, would act as an exciting cause. However, the mania may occur without any discoverable cause, that is one of the characteristics of this class of cases. This patient does not show any tendency toward dementia, whereas in dementia praecox there is marked evidence of deterioration.

There is always a tendency toward extravagance in cases of this type. If this girl had money she would buy fine clothing to make her more attractive to the opposite sex. You will note she is well developed physically, appears well nourished, and is a fairly good looking girl.

It will be observed that the patient is now talking incessantly (logorrhea); that her conversation is rambling and incoherent; she is greatly pleased to be in the society of males; that she directs her talk first to one, then another. Her hoarseness renders her articulation non-understandable, yet she is talking constantly.

Our examination being completed she is requested to leave for the ward with her nurse. She refuses to do this and has a paroxysm of weeping. Such rapid changes in mood is characteristic of manic depressive psychosis.

DISCUSSION:

C. Thompson: It is seldom we have an opportunity of seeing at a medical society a case of this kind. The diagnosis of dementia precox was evidently an error. While dementia praecox often occurs in individuals of this age, this seems to be the ordinary type of manic depression.

As Dr. Gardner has said, the earlier in life manic depression occurs the more favorable the prognosis for recovery from the attack; but the greater the likelihood of recurrence. While evidence of mental deterioration may not be noted at first, a general deterioration occurs later in the majority of instances.

These are peculiar cases and it is a difficult proposition to know just what to do with them. They may apparently recover in two or three months, then under some form of excitement, the advent of pregnancy, exhaustive or infectious disease, we get a recurrence. If this girl is sent to the asylum the chances are she will recover from this attack in two or three months, but just as soon as she returns home there will probably be a recurrence. That is the history of the majority of such cases.

H. E. Tuley: This patient has been the subject of considerable interest and study during her stay in the hospital, and I was particularly anxious that Dr. Gardner exhibit her before the society From the standpoint of the hospital it has been a most distressing and expensive case; she has destroyed about one hundred dollars worth of hospital furniture, such as beds, mattresses, clothing, etc. If given a blanket for her personal use, she will immediately tear it into small strips and wrap them around her body.

Dr. Gardner has spoken of the erotic impulses which such patients have. For instance, this girl has talked to us with the utmost candor concerning the most revolting circumstances. She told about having come in contact with a colored male while at the county jail. They were in adjoining cells with only iron bars between them, and she told of practicing irrumation upon this negro. She said the negro remarked "that she was a very good looking little white girl," to which she replied "that he was black in color but had a white heart." She spoke about these things without the least hesitation or embarrassment.

The trouble about disposing of this patient has been the jurisdiction claimed by the Chicago authorities over her. She has been here under the care of the War Board Community Service. They conferred with the Chicago authorities, and it is now a question of whether the court here will pay the expense of returning this girl to Chicago. I understand she was committed to an asylum or house of correction there at one time

This girl refuses to keep any clothing on her body. If she is given a dress, blanket or sheet,

she immediately destroys it. She is constantly singing, and altogether it is one of the most pitiable cases I have ever seen.

Gavin Fulton: I desire to emphasize what Dr. Gardner has said in regard to hereditary influences in cases such as he has reported. I am particularly interested in seeing this patient, because I now have a child under observation whose mother is similarly afflicted.

It seems remarkable that ordinarily no effort is made to prevent women of this type from becoming pregnant and bearing children. The mother of the child I have mentioned is now having her fifth attack of depressive mania within five years, and during that time she has been under the care of several prominent alienists. She was never given any warning against becoming pregnant or bearing children. Between attacks when she was mentally apparently normal, her greatest desire was to have a child. As time went by she became pregnant, and her mental state markedly improved. When thirty years old she gave birth to a fine baby. She had suffered four attacks of mania before the child was born. The baby was perfectly well until the age of six months when it developed acute pyelitis and was desperately ill. The mother began to show signs of excitement, irritability, etc., and expressed much fear for the safety of her child. A few weeks ago, when the child was taken to her room she enfolded it in her arms and almost squeezed it to death in her delight. Following this interview the mother's acute symptoms reappeared. That was three weeks ago, and so far as I know she is still in a manic state.

Neither this woman nor her husband had been given any warning against pregnancy by the physicians in charge. However, the husband told me he felt that they ought not to have children, but his wife's desire was so strong that he finally yielded and this baby was the result.

F. C. Simpson: Twenty years ago I had under observation a young girl from Charleston, West Virginia, who became violently insane. She was taken to the Norton Infirmary with the idea of keeping her quiet and instituting the proper treatment. She became violent and was removed to an institution in Cincinnati where she was kept for about a year and seemingly made a perfect recovery. Dr. A. M. Cartledge removed this girl's ovaries and tubes about fifteen months after her attack of insanity, and she thereafter enjoyed freedom from further attacks.

This girl was also erotic.

W. E. Gardner, (closing): In explanation of my remark concerning hereditary influences in cases of manic depressive psychosis: It is claimed that all children are more likely to inherit the mental characteristics of the father than of the mother. In other words, if there is any mental or nervous instability on the paternal side, similar defect is apt to manifest itself in the progeny. Stoddard claims the mental and nervous system of the child is developed from the ectoderm, which comes from the male parent, and for that reason children have a tendency to inherit the appearance and characteristics of the father,—through the paternal influence upon the nervous system.

I believe hereditary influence plays an important part in all manic depressive psychoses.

AMEBIC INFECTION WITH LIVER ABSCESS.*

By Henry Enos Tuley, Louisville.

The following pathological specimens are exhibited for Dr. Stuart Graves who is unable to be present. He has prepared some of the data which I shall read.

You will recall some weeks ago I reported the case of a man who died shortly after being admitted to the hospital, the only symptom being acute hemorrhage from the intestine. The man was practically in extremis when admitted and died in a short time.

At autopsy the stomach and upper intestine were found entirely normal, but the large intestine was filled with dark blood. Two large abscesses of the liver were also found at necropsy. The case proved to be one of amebic infection, and the specimen presented shows the amebic ulcers of the intestine, also the two large abscess cavities in the liver. The patient had lived in Kentucky all his life.

There was no reason for suspecting that the man had hepatic abscess. He was in the hospital only a short time before death occurred and his temperature was normal.

DISCUSSION:

J. Rowan Morrison: Abscess of the liver is not always easy of diagnosis. I recall the case of a man who had suffered with diarrhea for a few days. Prior to that time, however, he had complained of weakness and slight tenderness over the region of the liver.

A number of physicians had examined the patient at various times, and expressed the opinion that the pain in the liver region was the result of congestion, due to an inefficient heart. He had a little diarrhea, but no intestinal symptoms.

Dr. Wm. C. Dugan later examined the patient in the hospital and made the diagnosis of hepatic abscess, which operation verified. He also had amebic infection. He made a satisfactory recover after the operation.

H. E. Tuley, (closing): In the case reported

*Pathological exhibit before the Louisville Medico-Chirurgical Society.

I do not believe a correct diagnosis could possibly have been made at the time the patient was admitted to the hospital. He complained of no tenderness over the hepatic region, and there were no symptoms of liver abscess.

When admitted the patient was in extremis and death seemed imminent. I hardly believe it would have been possible to demonstrate the amebae in this case because of the tremendous exudation of blood. The patient passed a bed-pan full of blood but had no feces. The upper intestine contained fecal matter. The colon was enormously dilated at the sigmoid flexure where the blood had collected.

It would have been impossible, even if we could have placed the patient in the Hanes position, to make a satisfactory examination for the amebic ulcers.

FIBROSARCOMA OF THE MAMMARY GLAND.*

By Stuart Graves, Louisville.

The specimen presented herewith is an example of pure, fibrosarcoma of the mammary gland. It was sent to the laboratory last month by Dr. R. Lindsey Ireland, who had removed it from a patient about thirty (30) years of age. With the specimen was the information that the tumor had been noticeable for about fifteen years, but had been small until birth of baby about eight months before, after which it grew rapidly. There was no pain, but it gave considerable discomfort because of its size and weight. The gross description, taken from the laboratory record, is as follows:

"Specimen consists of an irregular, nodular mass 15x17x21 cm. covered with skin on one side and fascia on other. In skin appears nipple of mammary gland at one edge. At opposite end is a brown scab 10x12 mm. over a fluctuating area 7 cm. in diameter Some bosses are very hard, others are soft and fluctuating. On section a large amount of thin, chalky fluid escapes. Cut surface presents numerous lobulated, firm masses rounded in outline and varying from 1-15 cm. in greatest diameter. Some of these appear grayish with interlacing, pearly white lines between which tissue is tinted from pinkish brown to pale amber. Diffuse, scattered red spots. Some lobules are tough and flabby, streaked and mottled with yellow or creamy surface and readily fall away from fibrous tissue septum. From these recesses thin, creamy gray fluid can be expressed. In one place a pocket of thick, creamy fluid is opened and about 25cc. escapes. On multiple sections a few smaller lobulations are found, circumscribed and surrounded with fibrous tissue which is pinkish brown and homogeneous."

Microscopic section showed a pure, rapidly growing, connective tissue tumor.

MICROSCOPICAL DIAGNOSIS

Fibroblastoma, malignant, (Fibrosarcoma).

*Read by H. E. Tuley before the Louisville Medico-Chirurgical Society.

Ligamentary Hyperopexy.—Adeodato declares that the Alquio-Alexander-Adam operation by way of the inguinal canal is not surpassed by any other technic from the anatomic and physiologic standpoint. But when the uterus requires operative measures to bring it into its normal position, the shortening of the ligaments is best done through an abdominal incision. For this, he endorses a modification of Gilliam's method which avoids the danger of possible ileus that is liable with the Gilliam (or Doleris) technic. It occurred in one of his cases nine days after the operation. A loop of intestine had slipped down into the pocket formed in front of the uterus by the round ligament sutured to the aponeurosis of the rectus muscle in the Gilliam operation. The operation otherwise always gives ideal results. To avoid this drawback, he fastens the vertex of the loop of the round ligament not to the median line but to the side of it, striving to keep the fundus of the uterus apart from the incision in the peritoneum, to prevent development of adhesions. If the angle of flexion will not yield to this moderate shortening of the ligaments, he prefers to supplement it with an operation on the isthmus rather than to bring up the fundus too close to the sutured incision in the peritoneum. Local and general treatment before and after the operation is necessary to free the patient from all her chronic disturbances from retrodeviation.

Contusion of Hernia.—Hindse-Neilsen reports four cases of rupture of the small intestine from contusion of a hernia. Only one of the patients survived the resulting peritonitis. The danger of such an eventuality should turn the scale in favor of operative treatment of simple hernia. The prognosis of rupture of the bowel in the hernia is somewhat better than rupture otherwise, if the herniated loop does not retract into the abdomen. He cites some statistics showing spontaneous recovery in 4 per cent. of 200 cases and recovery after operation in 28 per cent. of 469 operative cases. In any event, a trauma in the region of a hernia calls for extremely careful examination and exceptional caution.

Radiologic Diagnosis of Gastric Cancer.—Guillen gives a number of colored illustrations showing the interpretation of the various roentgen findings.

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J. H. HENDREN *Cary*

ANESTHETICS
W. H. LONG *Louisville*

NEXT MEETING, ASHLAND, KENTUCKY.
September 23, 24, 25, 1919.

COUNTY SOCIETY REPORTS

Carlisle—The Carlisle County Medical Society met in a grove near Milburn, on June 3rd, 1919, with H. L. Mosby in the chair. After Divine invocation by F. N. Simpson, the scientific program was rendered as follows:

W. Z. Jackson read a paper on "Etiology and Pathology of Arterio-Sclerosis."

H. A. Gilliam read a paper on the "Symptomatology and Treatment of Arterio-Sclerosis."

Both papers were very able and well presented. They were jointly discussed by Drs. Crouch, Mosby and Marshall, and in closing by the essayists.

As Lloyd Simpson failed to prepare his paper on "Summer Diarrheas in Children," a general discussion of the subject followed, being opened by T. J. Marshall. The discussion brought out many valuable points and all agree that our memories have been greatly refreshed thereby.

The society adjourned for dinner, which consisted of a thirty pound Buffalo fish and coffee. The society tendered their thanks to Mrs. H. A. Gilliam who so kindly supervised the preparation of the dinner.

The society re-assembled at 1 P. M., and a general discussion of the health problem of Carlisle county followed. A committee consisting of T. J. Marshall, H. A. Gilliam and J. F. Dunn, was appointed to confer with the board of health of Ballard county, and Hickman county, as to the possibility of combining one or both of the counties with Carlisle and secure the all-time health officer.

The Secretary was advised to write Dr. McCormack asking him to send Dr. Blackerby down here to aid us in arousing some interest in regard to the health officer.

There being no further business the society adjourned.

J. F. DUNN, Secretary.

Clay—At a reorganization meeting of the doctors of Clay county, the following were present and participated in the reorganization of the Clay County Medical Society:

J. L. Anderson, Manchester; J. R. Burchell, Manchester; H. C. Hornsby, Burning Springs; P. J. Keith, Manchester; G. P. Webb, Burning Springs.

J. R. Burchell was elected President; G. P. Webb, Vice President; J. L. Anderson, Secretary and Treasurer.

The following resolutions were unanimously adopted:

1. Be it resolved that the constitution and by-laws of the original Clay County Medical Society, and all regulations laid out thereby, be and is hereby adopted by this, the reorganized Clay

County Medical Society as its constitution and by-laws.

2. Be it further resolved, that all regular practicing physicians of Clay county not present, and participating in this meeting, be, and are hereby requested to join said Clay County Medical Society.

3. Be it further resolved, that all physicians to whom resolution No. 2 is applicable refusing to comply with said resolution be not recognized by this society.

4. Be it further resolved, that all physicians to whom resolution 2 is applicable, not present, and participating in this meeting, shall have sixty days in which to comply with resolution No. 2.

5. Be it further resolved, that the Secretary of said Clay County Medical Society be and is hereby requested to send a copy of these resolutions to all physicians not present and participating in this meeting, to whom resolution No. 2 is applicable.

Since our organization Doctors C. T. Ricketts, of Bright Shade; J. M. Morris, Chestnutburg; C. B. Marcum, Big Creek, and P. J. Jones, of Oneida, have joined the society. There is only one doctor in the county who has not joined our society, H. C. Sparks, of Sexton's Creek.

The next meeting will be the first Tuesday in August. At said meeting J. R. Burchell will read a paper on the Morale of the Profession.

J. L. ANDERSON, Secretary.

Franklin—The Franklin County Medical Society met in social session in the office of Dr. R. M. Coblin, at 7:30 P. M., July 8th, 1919, and proceeded to business. President Coblin in the chair, and the following members present: Patterson, Minish, Garrett, Coleman, Barr and Williams.

Owing to the war and the influenza epidemic, this is the first meeting the society has had in regular session since March, 1918. First business was a resolution, unanimously adopted to continue the regular meetings of the society, adopting the round table and social feature at each meeting.

The election of officers then followed for the remainder of the year, until December 1st: President, J. P. Stewart; Vice President, Jno. Patterson; Secretary and Treasurer, U. V. Williams; Emeritus Delegate, Dr. L. T. Minish; Alternate, J. G. South; Censors, Coblin, Garrett and A. T. Coleman.

Adjournment until the second Tuesday in September, owing to the contemplated boat excursion during the month of August, in which the Franklin County Medical Society will unite with the Kentucky Midland and anticipates a grand time.

A delightful lunch was served by the estimable wife of the retiring president, R. H. Coblin, after which a social hour was spent very pleasantly.

U. V. WILLIAMS, Secretary.

Hardin—The Hardin County Medical Society met on June 12th, 1919, in the City Hall, Elizabethtown, with the following members present: C. Z. Aud, President; R. T. Layman, H. R. Nusz and S. T. Winstead, Cecelia; S. L. Stull and S. N. Willis, Vine Grove; C. C. Carroll, White Mills; W. J. Shacklett, Glendale; C. W. Rogers, Rineyville; E. P. Strickler, J. C. Mobley, J. M. English, W. F. Alvey and D. E. McClure, Elizabethtown.

The morning session was devoted to the report of cases and a paper by **W. F. Alvey,** "The Care of the Tonsils and Lymphoid or Adenoid Tissue of the Pharynx."

The afternoon session was devoted to the address by **Col. H. A. Sommers** on the proposition of the Red Cross to furnish an all-time health nurse to the county. After a full explanation of the plan, the society voted unanimously to extend the support of the doctors to the nurse and to cooperate in every way possible to make her work a success.

The society also heard a very complete report by **Capt. Harrab,** of the Public Health Service, on the water supply of Elizabethtown.

The society adjourned at 4 P. M., after agreeing to hold their next meeting July 10, at White Mills.

D. E. McCLURE, Secretary.

Russell—The Russell County Medical Society met in regular session in the office of Dr. Flanagont, Jamestown, June 4th. The President, Dr. Hammond, not being present on account of illness, J. B. Tartar, Vice President, called the meeting to order and proceeded to business.

After the regular business was disposed of in due form **Dr. Flanagan** made a long and interesting talk on the way he manaegd the "Flu."

J. B. Tartar reported two cases of Eclampsia. Used forceps and saved both mothers and children.

J. B. Scholl reported a case of "Podalgia of a Child of Six Years."

All present took part in the discussion.

Am sorry to hear that two or three of our doctors are in bad health.

The meeting adjourned to meet with the County Teachers' Institute about the first week in July.

J. B. SCHOLL, Secretary.

THE SUPPLY OF PRACTICAL NURSES.

What's the matter with the trained nurse? A wave of harsh and resentful criticism of the professional nurse seems to be sweeping over the country. In spite of a recognition of her splendid achievement in remaking hospital nursing, and of setting up high standards for private nursing; in spite of her magnificent and sacrificial service in the great war, she is not now viewed by large numbers of physicians and laymen as a ministering angel of mercy or as an unmixed blessing. And when rebuked for these harsh expressions of disapproval, her unfeeling critics forcefully reply: "She is getting just what she deserves." What does it mean?

Is it because through high standards of admission to her schools, and long years of training before she is graduated, she has chosen to make herself one of a small body of the elect, a superior being? Is it because with the high cost of living and the scarcity of these chosen few she has, labor-union-like, demanded higher pay which only the well-to-do can give? Is it because in the home she is autocratic and unwilling to serve except in accordance with rules that she herself lays down, often demanding that service be rendered her and causing discord in the household management at a time of crisis? Is it because in many hospitals she has gradually acquired more influence and power until through her officials she speaks with authority even to the management, and dictatorially demands that before the interests of the medical staff are considered—sometimes even before the interests of the patients—there must be considered those of the nurses? Prehaps there is a little truth in each one of these reasons. Perhaps in this resentful criticism, narrow as it may be, the nurses are reaping what they have sown.

The war and the epidemic of influenza, with the consequent scarcity of nurses, have acutely drawn attention to the trained nurse and to the fact that she does not supply the suitable agent for ministering to the large body of the ill. The very poor may get free nursing in the hospitals or, if lucky, at their homes through charity; the rich can and will pay whatever may be demanded; but the large mass of people of moderate means, too self-respecting to accept charity, must be deprived of her services or secure them at what to these people is often a ruinous sacrifice. More than this: a nurse of the highly trained type is not necessary or even desirable in the vast majority of cases of illness.

What are the requirements of a capable, skilled nurse, a physician's assistant? First a right personality; without this she is hopeless. Then intelligence, by which we mean a readiness of comprehension and understanding. Further, she should be of fair education, able to make herself understood, to write to read, to reason. Lastly, she should have had training of sufficient length, probably one year, in a good hospital. This training should teach her the proper bed care of the ill, the preparation of food, the management of the patient—not his illness—and the methods of administering drugs and other remedial agents. She should learn enough of anatomy so that she will not, with her hypodermic syringe, enter the bracial artery; she should know enough of symptomatology to sense the possible significance of blood in the stool or of abdominal pain in typhoid; she should know enough pathology so that she will not willfully violate the physician's orders against massaging a thrombosed femoral vein; she should have enough theoretical and practical training in bacteriology so that aseptic methods are to her, through her grasp of the reasons underlying them, methods to be scrupulously followed.

It goes without saying that other things—personality, native intelligence, etc.—being equal, the college or high school graduate will grasp these facts more readily and will, to this extent, be the more competent nurse. But such superknowledge is not necessary. For 90 per cent. of cases of illness, a skilled nurse with the characteristics just enumerated and with one year's training will answer fully as well and will fit into the average household better. She will be a true physician's assistant and will be a household helper not too proud to assist in the kitchen or even to help care for the baby. If this is true, why should not this capable woman of ordinary but sufficient ability and training be allowed to practice her profession licenses by the state and earning an honorable livelihood?

There is a place for the highly trained nurse, the registered nurse of to-day. From their ranks will come the superintendents of the training schools of various grades, the head nurses in our hospitals, the nurse in our operating rooms, nurses for cases of special severity or complication, and the teachers of nurses. Let the training schools preserve their high ideals, though there may be question as to the necessity or wisdom of requiring even a high school degree for admission or a three years' course of training except in special cases or for postgraduate work. For her own good let the nurse be a little less autocratic, a little less dictatorial, a little more human. *Non ministrari sed ministrare* is as good a motto for a training school as for a woman's college. —*Jour. A. M. A.*, Jan. 25, 1919.

KENTUCKY MEDICAL JOURNAL

BEING THE JOURNAL OF THE KENTUCKY STATE MEDICAL ASSOCIATION

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EDITORIAL

ASHLAND SESSION—IMPORTANT.

The Ashland Session of the Kentucky State Medical Association will, in many ways, be the most important one in its history.

The report of the Council, published elsewhere in this issue, indicates the unrest and the unsettled conditions which confront the profession. These problems can only be solved right when they have been thoughtfully considered by the entire profession. Think them over, and come to Ashland with a plan of action along some one line for the profession.

The Association's finances are set forth plainly, and in the greatest detail, just as they have been each year for the past fifteen years. These exhibits show in detail, every penny that has come into the treasury, and in equally great detail, what every nickel of your money bought. Read it all carefully. If we are not getting our money's worth, remember part of the responsibility is yours, and be sure you call attention to it.

The scientific program is novel in the one respect, particularly, that there is no essayist who is not a Kentuckian. It will be noted that the program is about equally divided between the members who were in the Army, and those who were compelled to remain at home.

Especial emphasis has been placed on the problem of early diagnosis in the various chronic diseases in which early diagnosis is essential for successful management. Thoughtful physicians will realize that the emphasis on diagnosis is not only scientific and just to the patients, but economical as well. Unless a real diagnosis is made when the patient first comes into your office, you have no right to make a charge, but if you make the careful, painstaking examination necessary for a diagnosis, you have no right not to make a charge.

The JOURNAL would especially emphasize the annual orations. It has previously been our custom and pleasure to honor some great leader in the profession from some other State by electing him our annual orator. This year Kentucky has two of its own men, who signally represent the highest aspirations and traditions of the Commonwealth—Drs. David Barrow and Irvin Abell, who respectively organized Base Hospitals Number 40 and 59 and carried them overseas for the service of humanity and civilization and who typify in a way no one else can better do, the *noblesse oblige* that has always characterized Kentuckians. By inviting them to jointly deliver the annual oration "Observations Overseas," the Council felt that it was voicing the unanimous feeling of the physicians of the State in honoring these two splendid men.

The delegates should arrange to get to Ashland on the C. & O. train arriving there at three o'clock on Monday afternoon, September 22nd. This will also be the best train for everyone.

The officers request the JOURNAL to especially emphasize the importance of the third day of this Session. It was felt that it was hardly fair to ask the members from many sections of the State to make so long a trip as the one to Ashland without giving them a real return for their money. Our members have responded liberally to the request for papers of high scientific order. They are all written and ready for your consideration and discussion. Especially note the papers that are to be read on Thursday, and arrange to remain in Ashland and hear them all.

It will be a revelation to most Kentuckians who have not visited Ashland, to see the remarkable development of this rapidly growing city. In many respects, it is the best conducted city in the State. Visiting sanitarians will be particularly interested in the rapid progress which is being made under the administration of the City Health Officer, Dr. Moore, and the County Health Officer, Dr. Kincaid. Its paved streets and beautiful roads give a demonstration of civic efficiency

which is badly needed in most Kentucky towns.

We are assured that there will be ample accommodations for all who come, and all of the sessions will be held in the beautiful Elks Club Building, which gives us both the finest and most convenient meeting place we have ever had anywhere.

Be sure to arrange to attend the Ashland Session, and help take your rightful place in the deliberations of the medical profession of Kentucky.

THE MORBIDITY REPORTS.

For the last ten years, the physicians of Kentucky have been insistent that the State Board of Health should inaugurate a system of morbidity reports for the preventable diseases, so that the people of the State could realize the enormous drain on its resources from this cause. At last, through the cooperation of the United States Public Health Service, every County and City Health Officer in the State is to be commissioned as an Assistant Collaborating Epidemiologist. This will enable all of these reports to be sent on franked cards or in franked envelopes by the attending physician to the Health Officer, who in turn, will send them in weekly to the State Board of Health. It is gratifying to add that it will also give every physician who reports his preventable diseases the privilege of franking specimens to assist in their diagnosis and prevention to the State Health Laboratories at Louisville or Lexington. Similar systems have been inaugurated in about a dozen States, notably in Mississippi and North Carolina, where they have been wonderfully successful. It goes without saying that from the very beginning, Kentucky physicians will make the system succeed better than it has anywhere else.

Everyone can recall the pride with which the announcement was made that we would enter the registration area for deaths of the United States Census Bureau, the first year after the passage of our Vital Statistics Law. The efficiency of our health organization was again demonstrated when we were admitted to the registration area for births, after a most rigid survey by experts, the first year of its creation. In a similar way we expect Kentucky to stand at the head of the registration are, for morbidity statistics of the United States Public Health Service.

Every physician in the State will receive the blanks as rapidly as the printer can turn them out. Ample supplies will be furnished each County Health Officer so as to avoid expense and trouble to them, insofar as this is possible.

The special attention of every physician is called to the regulations provided for communicable illnesses occurring in the families of dairymen or others handling milk or other food products. Every one will recognize the necessity for special rigidity in handling such cases.

Letters of inquiry from all parts of the State indicate special interest in the reports of the venereal diseases. Reporting physicians will recall that these diseases may be reported by number, i.e., instead of putting in the name of the patient and address, each physician can keep a registry of his own, containing the names and addresses and report to the Health Officer, the number of the case on his own registry, providing he is willing to assume the responsibility for that patient's failure to obey the regulations in regard to the spread of the disease. When a patient with syphilis or gonorrhea comes to your office, explain the regulations to him carefully. So far as the law is concerned, he is in the same position as if he had smallpox, and he must be made to understand that he will be put in close and rigid quarantine, unless he is willing to obey all the regulations which will prevent the spread of the disease. The Bureau of Venereal Diseases of the State Board of Health, will furnish neo-salvarsan or salvarsan to any physician who needs them, and for indigent cases they will be furnished free to the County Health Officer. For others they will be furnished at the very low wholesale price at which the State Board of Health is purchasing them in large quantities.

At first, doubtless, all of this will cause some confusion, but the profession realizes that the law will be enforced with the same degree of common sense that all of our other sanitary regulations have been. In the beginning, it is as new to its administrators as to the profession.

The State Board of Health will be glad to have criticisms and suggestions that will help in the administration, so as to make it as little burdensome as possible to everyone concerned.

The important thing is for us all to understand that it is now up to us to deliver the goods.

THE STATE LABORATORIES.

Considerable confusion has been caused by the removal of the State Laboratories. Unfortunately, just at the time of the removal, Dr. South, seriously overworked since the beginning of the influenza epidemic, became ill, and on this account the removal from Bowling Green was delayed. Many specimens

had to be remailed, and the first confusion and delay that has ever been properly chargeable to our Laboratory has resulted from causes entirely beyond its control.

Under the new arrangement, in the new law, Dr. South has become Chief of the Bureau of Epidemiology and Bacteriology, and as such will have general charge of the State Health Laboratories, which will functionate both at Lexington and Louisville. The Laboratory at Lexington will be under the supervision of Prof. J. O. LaBach, and the bacteriological work will be done by Dr. W. R. Pinnell. Drs. South and Pinnell have been made Assistant Collaborating Epidemiologists of the United States Public Health Service, and as such will be in position to receive specimens franked, and in this way the profession and people of the State will be relieved of an expense which has been amounting to about six thousand dollars a year. This is only one of the many advanced steps that Dr. South is planning in the management of the new Bureau.

A number of anxious inquiries have been received as to whether the Laboratories in Louisville will continue to receive specimens throughout the day and night as has been the case for the past ten years in Bowling Green. It is a pleasure to say that arrangements have been made so that the Laboratories and offices of the Board will be in operation for twenty-four hours every day, and specimens received on the late trains in Louisville will receive as prompt attention as they have heretofore. Dr. South has arranged for depots for the Laboratory products, including vaccines and anti-toxines, in practically every County, but telephone orders for any of these things will be received at the Louisville office at any hour of the day or night, and shipped out on the next train.

It is interesting to the profession to know that our State Laboratory is the only one in the United States which gives the twenty-four hour service. Call Main 1266, Cumberland Telephone; City, 3321, on the Independent line.

All specimens for Wasserman's and for water analyses should be sent to the State Health Laboratories at Lexington, as well as all specimens under the Food and Drug Act. Any County or City Health Officer can send in specimens under the latter law. If any physician or citizen desires any investigation made in regard to either food or drugs, this can be done through their local health officer.

The State Board of Health, in arranging these matters is anxious to give the best service to the physicians and people of Kentucky, and will be glad to receive suggestions or advice as to how its usefulness can be increased, from any one interested.

SCIENTIFIC EDITORIALS

RENAL TUBERCULOSIS — END RESULTS IN THE NEPHRECTOMIZED.—1329 CASES.

In an editorial appearing in the JOURNAL, May, 1911, reviewing the literature, and with report of cases, the writer pointed out that renal tuberculosis was an absolute surgical problem. That Koch's bacillus was the exciting cause, which most invariably reaches the renal tissues by way of the blood stream, which is known as haemotogenous infection, and when this was demonstated to be the primary focus, it was termed the *protopathic type;* and when it was secondary to a focus in the lungs, bones, joints or other organs, was called *deuteropathic.* This I think to be the most common.

That the following pathological facts have been established, beyond a doubt; that renal tuberculosis was a very common disease of young adult life, occurring most frequently in the decade between twenty and thirty; being uncommon in childhood, and rare in old age.

That it was most invariably a haematogenous unilateral affection; that the second kidney was rarely affected simultaneously, as 60 per cent of the autopsy cases had shown this sister kidney free from tuberculosis. It was a one-sided local disease, as manifested in the urinary tract, in the majority of cases (85 to 90 per cent) and tends to remain so for some time (from one to seven years).

That statistics have erred in the past relative to sex, showing in the nephrectomized cases for renal tuberculosis, that 60 to 70 per cent were women, but more recent investigation tends to show that the kidney of the male is more frequently attacked than that of the female.

In Cabot and Crabtree's series of seventy-cases (1915) there were 34 males and 36 females. Forty right sided lesions and 27 left sided, while in three cases, the side was not mentioned.

In 1176 cases reported by von Frisch, Wildbolz, Asakura, Walker, Guilliard, Tuffier, Albarran and Braasch there were 633 males and 543 females. There was no data given relative to right or left sided lesions.

END RESULTS.

Prior to almost two decades ago, the condition was rarely diagnosed, as shown from the records of the Vienna General Hospital, from 1893 to 1902. In 20,770 autopsies there were found 191 cases of renal tuberculosis, and only six had been diagnosed. Sixty-seven of these were found to be unilateral and might have been treated successfully surgically.

Blum reports a series of 26 cases (unilateral) which was not treated surgically, with 24 deaths within five to six years, and says that medical treatment is a waste of precious time, and diminishes the chance of operation. He further reports the astonishingly favorable decrease in mortality rate following nephrectomy, which he attributes to early diagnosis and accurate data in regard to the functional capacity of the sister kidney, as ascertained by the cystoscope and ureteral catheter.

Bordeur up to 1890 had 59 per cent mortality following nephrectomy for renal tuberculosis. Palet up to 1893, had 40 per cent. cent. Pousson up to 1902 had 29.4 per cent. Schmiedon (1902) 31.3 per cent. P. Wagner (1905) 24.5 per cent. Blun (1907) 13.3 per cent. Zukerkandl (1902 to 1908) 847 cases, with a mortality of 11.1 per cent. Wildbolz reports his immediate mortality in 139 cases for the years 1902 to 1914 at 2.8 per cent. Asakura for the years 1902 to 1910 had 5.7 per cent operative deaths. Israel's collection of 1,023 cases reported in 1911 had a mortality of 12.9 per cent. Von Frisch reported in 1911 a series of 100 nephrectomies with 10 per cent mortality. Braasch (1912) reported a series of 203 nephrectomies from the records of the Mayo Clinic with a mortality in the hospital of 2.9 per cent. Alberran 1910 reported 108 cases nephrectomized, with 3 operative deaths, which gave him a record of 2.7 per cent mortality. Alberran followed up 77 of his 108 cases; 50 were cured, 22 seen two years after operation, 14 six years after operation, and 3 nine years after operation. Seventeen still had vesical trouble, but were much better since operation; ten died later, five from tuberculosis of the lungs.

Cabot and Crabtree's series (1915) from the records of the Massachusetts General Hospital included 103 cases nephrectomized with operative mortality of 3.8 per cent. Four cases died within the hospital. Ninety-nine left the hospital alive. Sixty per cent were cured. No case was considered in which there was not an interval of two years since operation. The average duration of time since operation in this series was five and one-half years. One patient was living at 18 years after operation; one at 15 years; one at 13 years; two at 11 years; and one at ten years after the nephrectomy.

CABOT AND CRABTREE'S CONCLUSIONS.

Young individuals with early lesions of the kidney which usually show considerable cortical tuberculosis and perinephritis do less well after nephrectomy than those of more advanced age in whom, however, the disease is often more extensive. The reason appears to be the extent of acquired immunity.

The practicability of artificial immunization of these individuals demand consideration.

2. Male patients offer more difficult problems in treatment than female and the prognosis is less favorable. Genital lesions are uncommon in the female while 32 per cent of the male cases of this series show genital involvement.

3. Immediate mortality for this series is 3.8 per cent. The operation of nephrectomy for tuberculosis is not serious as regards death of the patient. The immediate mortality is that consequent to pneumonia shock, and accident, and should not exceed 5 per cent in unilateral.

4. Late mortality for this series is 20 per cent. A late mortality of 15 to 20 per cent. should be expected; about 50 per cent of the deaths taking place within the first 2 years, and the remaining 50 per cent before 5 years where the lesion is unilateral.

5. Sixty per cent of our cases can be considered cured. Somewhere between 55 to 70 per cent of the cases operated upon for unilateral lesions can be considered cured of active tuberculosis lesions at the end of five years. There remains, however, in about 35 per cent of the cases legacies of the disease in abnormal urine and persistent symptoms. Nephritis probably of toxic origin and secondary infections of the remaining kidney; irritable bladders sometimes due to cicatrices; traces of albumin and slight pyuria are among the commonest permanent effects of the disease.

6. In 10 to 15 per cent of the cases the progress of the disease will not be checked by nephrectomy. There were 9 cases (12.8 per cent) unimproved by operation in this series.

7. The results for this series of drainage of the wound after nephrectomy compare favorably with undrained wound in our recent cases in regard to sinus formation. There is approximately 25 per cent which heal by first intention and 75 per cent in which sinuses develop irrespective of the method of wound closure employed. In undrained wounds sinus development is late and where the fol-

low-up system is carried out may give a false idea of the value of the treatment.

SOME PAGES FROM FOLIA UROLOGICA

(Die Endresultate der Nephrektomieen bei Nierentuberkulose.)

By James Israel.

(Abstracted and Translated—W. L. Lehmann, Stettin.)

There is no spontaneous cure of kidney tuberculosis.

Tuberculin treatment does not cure kidney tuberculosis. It is wrong to wait for the effect of tuberculin treatment instead of immediate nephrectomy.

Israel's examinations as to the end results of nephrectomy for kidney tuberculosis are based upon 1023 cases including 170 own observations.

Late results are findings after the 6th month post operationem, late deaths are called cases which succumbed after,—early deaths which occurred before the 6th month post operationem.

The late mortality is 10-15 per cent., the early mortality 12.9 per cent. The total mortality is about 25 per cent., i.e., three-quarters of all patients will be saved by the operation.

The mortality is markedly higher in men than in women.

The main cause of the larger late mortality in men is chronic tuberculosis of the lungs; the larger number of early deaths is caused by the prevalent frequency of acute miliary tuberculosis and heart insufficiency in men.

The main cause of late death is lung tuberculosis and affection of the other kidney, twice as often as causing early death.

Acute miliary tuberculosis happens twice as often in the first six months after operation as in the whole time after. In the majority of cases it is a direct consequence of the operative intervention.

More than half of all late deaths occur before the end of the second year after operation. The cause of death is lung tuberculosis in 45..2 per cent, kidney affection in 35.9 per cent, acute miliary tuberculosis in 14 per cent of all cases.

At least 73 per cent of all cases of chronic lung tuberculosis leading to death afterwards exist before operation.

Affections of the other kidney causing a late death are 38.6 per cent of all late deaths, 5 per cent of all late observations.

The kidney affections leading to late death are not of tuberculous nature in 30.5 per cent; of tuberculous nature in 69.5 per cent.

The non-tuberculous affections of the kidney are mainly nephritis, less frequently calculosis (developed after operation), hydronephrosis and pyelonephritis.

Hypertonia characteristical of Bright's disease is of value for the differential diagnosis between toxic affection of the other kidney and real Bright's.

Toxic affection of the other kidney is generally not progredient but undergoes involution after operation totally or leaving small residues of no clinical evidence.

In case of unilateral kidney tuberculosis developed after Bright's disease nephrectomy should be done only if the danger from the tuberculous kidney seems to be greater than from the lack of secreting parenchyma.

Almost half of all tuberculoses of the other kidney lead to death before the end of the second year after operation; some have survived nephrectomy as long as 9 years.

Tuberculosis of the other kidney appearing later on is present at the date of operation in the large majority of cases; 11.1 per cent develop post operative.

Kidney tuberculosis develops p. op. 1.6 per cent of all cases living or perished after the 6th month.

Nephrectomy in bilateral tuberculosis should be done only in case of severe destruction of the more affected kidney, in case of frequent severe hemorrhage, of intolerable pain and colics—if the other kidney is supposed to be only incipiently affected.

Nephrectomy in unilateral kidney tuberculosis prevents a postoperative tuberculosis of the other kidney very often. Tuberculosis will be translated from one kidney to the other very much more frequently than from any focus outside the kidney, especially from the lungs.

After nephrectomy in unilateral tuberculosis the tubercle bacilli disappear from the urine in three-quarters of all cases.

The more extended the bladder affection before operation the more frequently the bacilli persist.

The absence of bacilli can be stated only by a negative result of inoculation.

Bacilli will be found in cases with completely normal conditions of the kidney left and normal bladder function and general conditions and have observed until the 17th year after operation.

Bacilli can be found in urine without any albumen.

The majority of patients with bacilli have been without pain.

The frequency of micturition has become entirely or almost normal in 75 per cent of all cases with bacilli.

Most carriers of bacilli have morphologi

and chemical alterations or the urine, but not more frequently than patients without bacilli.

94.7 per cent of patients with bacilli in the urine had an increase of bodal weight.

Some patients with bacilli were without any symptoms like the carriers of typhoid bacilli.

Judging from the disappearance of bacilli the tuberculosis will be cured in 63.8 per cent of the cases.

The urine will not become completely normal in more than three-quarters of all nephrectomies; albumen persists in 53.4 per cent, mostly only traces; red blood corpuscles and shades in 48.8 per cent; leucocytes in 46.5 per cent; casts, mainly hyaline, in 23.2 per cent.

The cystoscope states that the bladder affection is cured in 43.5 per cent, improved in 45.1 per cent, stationary or worse in 9 per cent.

The bacilli disappears more frequently than the affection of the mucous membrane of the bladder; the alterations found afterwards cystoscopically are mostly not of tuberculous nature.

Pain and frequency of micturition are being improved in the same per cent of cases as the bladder affection (80 to 90 per cent); but the pain will disappear completely in twice as many cases as normal micturition returns.

If the frequency normal before becomes worse after operation it is caused by the affection of the kidney left.

The more extended the bladder affection the more rarely the pain disappears. The pain will disappear more frequently than the bladder be cured.

Tuberculosis of the ureter will be cured spontaneously after nephrectomy in the majority of cases.

Ureter fistulae will develop in 11.5 per cent mostly healing within four years.

The method of providing for the ureter has no marked influence upon the frequency of fistula formation.

The bodal weigh increases in 93.9 per cent of the cases after operation.

Gravity does not alterate a normal kidney left more frequently than in healthy women.

Men and women are not allowed to marry but after complete disappearance of bacilli.

All results of our examinations favor the obligatory early operation in cases of unilateral tuberculosis.

Note:—Coalated from the following European Surgeons: Barth, Danzig; Brongerma, Amsterdam; Dollinger, Budapest; Ekehorn, Upsula; v. Federoff, St. Petersburg; Garre, Bonn,; Giordano, Venedig; Heresco, Bukarest; Hottinger, Zurich; von Tellyes, Budapest; Legueu, Paris; Luys, Paris; Makara und Steiner, Kolozsvar; Nicholich, Triest; Pousson, Bordeaux; Rafin, Lyon; Rovsing, Kopenhagen, Stein, Stuttgart; Tuffier—Paris; Zukerhandl—Wein.

Carl Lewis Wheeler.

THE FUTURE SURGERY AS INFLUENCED BY THE GREAT WAR.

The experience gained in the treatment of wounds during the recent war will have its influence on the future of surgery of civil life. While these two departments, military and civil surgery, have in the first been considered widely separated, of late with the great development of industrial medicine, they are seemingly brought closer together and the lessons learned in the War may be of much more value than we might at first suppose. The most progress seems to have been made in the treatment of infections and shock.

The greatest single factor in the prevention or the control of wound infection was probably the early removal by excision of all the devitalized tissue and foreign materials around and in the wound, thus at one stroke of the scalpel getting rid of the cause of future wound infection.

Next the early and persistent treatment of the wound by the Carrell-Dakin method before infection had advanced too far. The latter method is too well known, and we hope properly used, to need description at this time. While many other valuable solutions and agents for the sterilization of wounds were introduced during the war this preparation seems to have met with the most general approval. With the routine use of tetanus antitoxin, this dreadful disease has practically been eliminated and such treatment as magnesium sulphate and phenol (carbolic-acid) has been abandoned. Gas gangrene has been carefully studied and its treatment has now been placed on a more scientific basis, so that those of us when we encounter the disease can be better prepared for treatment based on the military observations and methods. In no sphere was the teaching of the civil surgery better proven than in the treatment of penetrating wounds of the abdomen.

Lung surgery has been proven possible without the complicated pressure apparatus which we supposed was so essential to success. Much of our former teaching concerning the surgery of joints has undergone a complete revision and there has been no greater contribution to the modern surgical progress than the methods of treatment in-

troduced for purulent arthritis by Willems of Belgium. By "wide arthrotomy followed by immediate active mobilization" he has accomplished what was formerly considered impossible.

With the standardization of splints and other apparatus for immobilization of fractures, the use of plaster of Paris has been almost eliminated. The greatest single contribution of military surgery to civil surgery during this great war, was, in the opinion of the writer, the knowledge and the treatment of that most perplexing problem called "shock," and we therefore quote freely from a recent article by Jos. A. Blake, (*Annals of Surgery*, May, 1919):

"The war has contributed greatly to our knowledge and understanding of the condition known as surgical shock. Shock is not only one of the chief causes of early mortality in battle casualties, but is frequently encountered in civil practice; and the importance of any contribution to our knowledge of its cause and treatment can hardly be overestimated. It would take too long to enumerate the theories which have been advanced in regard to the nature and causes of shock. It is sufficient to state that no clear definition of the condition or of its origin existed at the beginning of the war. True surgical shock as we now understand it, psychical shock and hemorrhage were confused with one another, and there were consequently conflicting views as to etiology and treatment. Shock is characterized by a progressive depression of the vital forces as evidenced by weakness of the systemic and cardiac muscles, lowering of bodily temperature, and, finally, death. Hemorrhage causes similar symptoms, and hastens the development of shock; yet pure surgical shock may exist without hemorrhage. It is largely through the investigations of Cannon during the war that a working hypothesis has been reached which affords a reasonable explanation of the phenomena attending shock and at the same time a basis for its rational treatment. Cannon's hypothesis is, briefly, that shock is due to a diminution in the normal alkalinity of the blood caused not only by deficient oxidation but also, more than by the absorption of acid substances produced by the catalysis (i.e., chemical breaking down) of injured muscle tissue. Anything which contributes to deficient oxidation, such as the loss of red corpuscles (hemorrhage) or the reduction of body heat, increases acidosis and consequently, shock. And as shock produces cardiac weakness and lowering of blood-pressure (resulting in sluggish circulation and therefore in deficient oxidation), a vicious circle is quickly established and the victim is doomed unless the chain can be broken. It has been found that if external heat be applied to the body, shock may be prevented or even arrested; but if the normal alkalinity of the blood has already undergone a certain diminution, fresh normal blood must be supplied by transfusion in order to restore the alkalinity and increase the blood pressure and oxygen carriers. Infusions of alkaline solutions are not altogether satisfactory. By transfusion, the patient, having been temporarily resuscitated is enabled to withstand the operation necessary to remove the crushed and torn muscle tissue, which, if allowed to remain, would again bring about the condition of shock and in any case lead to serious infection."

"In order that the treatment of shock could be carried out efficiently, shock teams were organized. The personnel of these teams was generally recruited from the physicians and pathologists attached to the formation, so that the surgeons might be free for the operations. The duties of these teams were to classify the donors, prepare the blood, examine each patient on admission and, if in shock, see that the ordinary means of resuscitation were properly applied, observe the reaction of the patient to the treatment, and, if necessary, give a transfusion. The results obtained were excellent; the patients did not go to the operating room until they were ready to be operated upon, and therefore the operator's time was not lost in determining the condition of the patient and in giving transfusion."

"The technic of blood transfusion was so perfected and simplified during the war as to make it far less dangerous, thus extending its use and therefore its value as a therapeutic procedure. One of the chief improvements, and one that might well be adopted for any civil hospital, was the classifying of donors among the personnel, so that blood suitable for any case could be immediately available without having to lose time in finding a donor with blood of the same type as that of the patient."

JOHN R. WATHEN.

SPECIFIC TREATMENT AT HOT SPRINGS, ARK.

We are quite often consulted by patients in regard to the value of Hot Springs, Ark., for the treatment of syphilis and the advisability of their going there for treatment. As a rule patients may be divided into two classes: those who wish to take treatment for two or three weeks at the springs once a year for three years, with no treatment at home and those who have taken more or less treatment, but unsuccessfully and have reached that

stage of chronic syphilis marked by a decided asthenia. The first group, like those who want one injection of arsphenamin, should be discouraged from any idea that they can be cured at Hot Springs or elsewhere in a few weeks. It is with the second group, the old chronic cases, that we may hope for real benefit.

The amount of mercury, which is still, in our opinion, in spite of the arsphenamins the mainstay of specific therapy, which can be absorbed and successfully excreted will vary in the same patients considerably from time to time, depending upon his general condition. It is usually low in the asthenic stage. All adjuvant measures which will stimulate general nutrition, promote circulation and glandular activity and lead to improved elimination will enhance the value of the mercury absorbed, protect the body against its effects and increase the amount which can be administered.

The mineral waters recommended in syphilis may be roughly divided into three classes. The salines rich in sodium chloride, accelerating elimination and oxidation, of especial value in the treatment of syphilis itself, but often helpful in certain affections which have supervened under the influence of the specific affection; and the sulphur waters.

The springs at Hot Springs which have earned the place much of its reputation are largely of the sulphur bearing class; these are undoubtedly of value in many cases in aiding the absorption and elimination of mercury and allow the use of true intensive specific therapy.

Another valuable adjunct is the thermal treatment. Through its promotion of oxidative processes it renders the organism more tolerant to mercury. The physiological action of the thermal treatment is exceedingly complex, being the outcome of several factors. We have to take into consideration not only the temperature, but the chemical composition of the water. The salt and carbon dioxide baths have established themselves in the treatment of high blood pressure, a condition which exists so often in syphilis. Then, too, apart from the factors inherent in the waters themselves we have to consider those of equal importance, depending upon climate, altitude, hygienic conditions and mental condition of the patient. The change of scene, fresh air and freedom from business and family worries are naturally of great benefit to the general health.

In the past there has been a certain amount of distrust of Hot Springs owing to friction between certain physicians there and the profession elsewhere. There was too much commercialism and the desire of some medical and non-medical men to bring the patient back to Hot Springs as often as possible led them to advise the patient against his own interest. He was often told that no other treatment was necessary if he would come there every few months for a few weeks. On the other hand a dislike of allowing their patients out of their hands led some physicians to advise against their patients going to any springs, even when it was really advisable. Since the springs have come under federal supervision the tendency to commercialism should be greatly diminished and physicians should feel more free to employ the undoubted benefits to be derived in certain cases.

M. L. Ravitch *and* S. A. Steinberg.

OFFICIAL ANNOUNCEMENTS

TENTATIVE PROGRAM--STATE MEDICAL ASSOCIATION

TUESDAY, SEPTEMBER 23—9:00 A. M.

Call to Order by the President J. S. Lock, M. D., Louisville

Invocation Rev. W. C. Condit, Ashland

Address of Welcome:

In Behalf of the City of Ashland Hon. H. R. Dysard, Mayor

In Behalf of the Boyd County Medical Society.. J. W. Kincaid, M. D.

Response to Address of Welcome C. G. Stephenson, M. D. Becknersville

Installation of the President.

Address of the President..John G. South, M. D. Frankfort

Report of Chairman, Committee on Arrangements.

SCIENTIFIC SESSION—10:00 TO 12:00 A. M.

The Surgery of Thyrotoxicosis L. Wallace Frank, M. D., Louisville

Laboratory vs. Clinical Diagnosis L. L. Solomon, M. D., Louisville

Rural Sanitation W. B. Moore, M. D., Cynthiana

Acute Mastoiditis W. B. McClure, M. D., Lexington

SPECIAL ORDER AT 12:00 M.

Oration in Surgery—"Complicated Fractures." (Lantern slides) W. B. Owen, M. D., Louisville

TUESDAY, SEPTEMBER 23.—SCIENTIFIC SESSION—2:00 P. M.

The Prevention of Typhoid Fever C. W. Shaw, M. D., Alexandria

The Epidemiology of Communicable Disease..... Irvin Lindenberger, M. D., Louisville

The Tendency Toward State Medicine..... W. W. Anderson, M. D., Newport

Early Diagnosis of Diseases of the Heart C. W. Dowden, M. D., Louisville

Obstruction with report of Cases:

(1) Intussusception—6 weeks baby;
(2) From Ascaris Lumbricoides;
(3) From Enterolith;
(4) Due to Embolism from Superior Mesenteric Artery Horace Rivers, M. D., Paducah

Surgery in the Rural Districts
C. C. HOWARD, M. D., Glasgow

Treatment of Influenza and Its Complications
W. F. BOGGESS, M. D., Louisville

TUESDAY EVENING—PUBLIC SESSION—8:00 P. M.

VICTORY ADDRESSES

Overseas Observations
IRVIN ABELL, M. D., Louisville, Recently Commanding Officer Base Hospital 59.

DAVID BARROW, M. D., Lexington, Recently Commanding Officer, Base Hospital 40.

WEDNESDAY, SEPTEMBER 24—8:30 A. M.

Surgical Advance W. E. SENOUR, M. D., Bellevue

X-Ray in Diagnosis I. H. BROWN, M. D., Winchester

War Surgery of Bones and Joints as Applied to Civil Practice I. A. ARNOLD, M. D., Louisville

Fractures of Cervical Vertebra; Diagnosis and Treatment F. P. STRICKLER, JR., M. D., Louisville

Functional Education of Traumatic Injuries.....
CHARLTON WALLACE, M. D., New York City

Eclampsia and Allied Conditions
L. C. REDMON, M. D., Lexington

The Extremes of Age as Surgical Risks
E. J. BROWN, M. D., Stanford

SPECIAL ORDER AT 12:00 M.

Oration in Medicine—"Early Diagnosis of Pulmonary Tuberculosis....JOHN W. SCOTT, M. D., Lexington

WEDNESDAY AFTERNOON—SCIENTIFIC SESSION—2:00 P. M.

Psychology and Citizenship
C. B. CORNELL, M. D., Lexington

Focal Infection in Relation:

To the Heart C. G. DAUGHERTY, M. D., Paris

To the Bones and Joints
P. C. LAYNE, M. D., Ashland

The Problems of Diagnosis
R. JULIAN ESTILL, M. D., Lexington

Treatment.....S. J. MEYERS, M. D., Louisville

Diagnosis of Tuberculous Peritonitis
C. A. VANCE, M. D., Lexington

Modern Advances in Diagnosis and Treatment of Cerebro-Spinal Meningitis
E. B. BRADLEY, M. D. Lexington

Diagnostic Significance of Vertigo to the General Practitioner J. D. HEITGER, M. D., Louisville

Diagnosis and Treatment of Peripheral Nerve Injuries B. F. ZIMMERMANN, M. D., Louisville

Fecal Fistula, ...W. L. GAMBILL, M. D., Jenkins

Early Diagnosis of Nephritis
J. ROWAN MORRISON, M. D., Louisville

THURSDAY, SEPTEMBER 25—9 A. M.

The Use and Abuse of Vaginal Syringes
N. W. MOORE, M. D., Cynthiana

Report of an Unusual Case
Z. A. THOMPSON, M. D., Pikeville

My Experience with the Obstructing Prostate
C. L. WHEELER, M. D., Lexington

Prostatectomy J. HUNTER PEAK, M. D., Louisville

Pituitrin, Its Use and Results
W. J. SHELTON, M. D. Hickory Grove

Surgery of the Tendons ..J. G. CARPENTER, M. D., Stanford

THURSDAY AFTERNOON—SCIENTIFIC SESSION—1:30 P. M.

The All-Time Health Officer
J. A. PHELPS, M. D., Hickman

Shell Shock J. J. MOREN, M. D., Louisville
The Tuberculosis Clinic ..O. O. MILLER, M. D., Louisville
Early Diagnosis in Diagnoses of the Rectum
B. ASMAN, M. D., Louisville

Pellagra HENRY GAMBILL STAMBAUGH, M. D., Wolfpit
Injuries to the Hand and Their Treatment
J. CECIL SPARKS, M. D., Van Lear

.....
A. A. WEDDLE, M. D., Barren Fork

OFFICIAL CALL.

THE SIXTY-NINTH ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL ASSOCIATION TO BE HELD IN ASHLAND, SEPTEMBER 22, 23, 24 AND 25, 1919.

To the Officers and Members of the Component County Societies of the Kentucky State Medical Association:

The Sixty-Ninth Annual Meeting of the Kentucky State Medical Association will convene in the Auditorium of the Elks Club, Ashland, Kentucky, on Monday, Tuesday, Wednesday, and Thursday, September 22, 23, 24 and 25, 1919.

THE HOUSE OF DELEGATES

The House of Delegates of the Kentucky State Medical Association will convene in the Elks Club, Ashland, Kentucky, at 2 P. M., on Monday, September 22, 1919.

FIRST GENERAL SESSION

The First General Session, which constitutes the opening exercises of the scientific functions of the Association, will be held in Auditorium, Elks Club, Ashland, Kentucky, at 9 A. M., Tuesday, September 23, 1919.

THE COUNCIL

The Council will convene in a parlor of the Ventura Hotel, Monday, September 22, 1919, 11 A. M.

THE REGISTRATION DEPARTMENT

The Registration Department will be opened in the Exhibit Hall at the Elks Club from 10 a. M. to 6 P. M. on Monday, September 22, 1919; from 8 A. M. to 6 P. M. Tuesday and Wednesday, September 23 and 24, and from 8 A. M. to 11:30 A. M. on Thursday, September 25th.

COUNCILOR DISTRICTS

FIRST DISTRICT.

BALLARD	FULTON	LYON
CALDWELL	GRAVES	MARSHALL
CALLOWAY	HICKMAN	MCCRACKEN
CARLISLE	LIVINGSTON	TRIGG

SECOND DISTRICT.

BRECKINRIDGE	HENDERSON	OHIO
CRITTENDEN	HOPKINS	UNION
DAVIESS	MCLEAN	WEBSTER
HANCOCK	MUHLENBURG	

THIRD DISTRICT.

ALLEN	CUMBERLAND	METCALFE
BARREN	HART	WARREN-EDMONSON
BUTLER	LOGAN	SIMPSON
CHRISTIAN	MONROE	TODD

FOURTH DISTRICT.

BULLITT	HENRY	SHELBY
GRAYSON	LARUE	OLDHAM
HARDIN	MEADE	NELSON

	Fifth District.	
Anderson	Franklin	Owen
Boone	Gallatin	Spencer
Carroll	Jefferson	Trimble
	Sixth District.	
Adair	Green	Taylor
Boyle	Mercer	Washington
	Marion	
	Seventh District.	
Casey	Lincoln	Russell
Clinton	Pulaski	Wayne
Garrard	Rockcastle	McCreary
	Eighth District.	
Bourbon	Harrison	Pendleton
Bracken	Jessamine	Robertson
Campb'l-Kent'n	Mason	Scott
Fleming	Nicholas	Woodford
Grant		
	Ninth District.	
Boyd	Greenup	Magoffin
Carter	Johnson	Martin
Elliott	Lewis	Pike
Floyd	Lawrence	
	Tenth District.	
Bath	Lee	Owsley
Breathitt	Letcher	Perry
Clark	Madison	Powell
Estill	Menifee	Rowan
Fayette	Montgomery	Wolfe
Knott	Morgan	
	Eleventh District.	
Bell	Jackson	Leslie
Clay	Knox	Whitley
Harlan	Laurel	

CONSTITUTION AND BY-LAWS OF THE KENTUCKY STATE MEDICAL ASSOCIATION ADOPTED AT PADUCAH IN 1902 AS AMENDED.

CONSTITUTION.

Article I.—Name of the Association.

The name and title of this organization shall be the Kentucky State Medical Association.

Article II.—Purpose of the Association.

The purpose of the Association shall be to federate and bring into one compact organization the entire medical profession of the State of Kentucky, and to unite with similar associations in other states to form the American Medical Association, with a view to the extension of medical knowledge, and to the advancement of medical science to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interests and to the enlightenment and direction of public opinion in regard to the great problems of state medicine, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

Article III.—Component Societies.

Component Societies shall consist of those county medical societies which hold charters from this Association.

Article IV.—Composition of the Association.

Section 1. This Association shall consist of Members, Delegates and Guests.

Sec. 2. Members. The members of this Association shall be the members of the component county medical societies.

Sec. 3. Delegates. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component county societies in the House of Delegates of this Association.

Sec. 4. Guests. Any distinguished physician not a resident of this State may become a guest during any Annual Session upon invitation of the Association or its Council, and shall be accorded the privileges of participating in all of the scientific work of that Session.

Article V.—House of Delegates.

The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1), Delegates elected by the component county societies, and (2) *ex officio*, the officers of the Association as defined in Article VIII, Section 1, of this Constitution.

Article VI.—Sections and District Societies.

The House of Delegates may provide for a division of the scientific work of the Association into appropriate Sections, and for the organization of such Councilor District Societies as will promote the best interest of the profession, such societies to be composed exclusively of members of component county societies.

Article VII.—Sessions and Meetings.

Section 1. The Association shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

Sec. 2. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

Article VIII.—Officers.

Section 1. The officers of this Association shall be a President, three Vice Presidents, a Secretary, a Treasurer, and eleven Councilors.

Sec. 2. The President and Vice Presidents shall be elected for a term of one year. The Secretary, Treasurer and Councilors shall be elected for terms of five years each, the Councilors being divided into classes so that two shall be elected each year. All of these officers shall serve until their successors are elected and installed.

Sec. 3. The Officers of the Association shall be elected by the House of Delegates on the morning of the last day of the Annual Session, but no Delegate shall be eligible to any office named in the preceding section, except that of Councilor, and no person shall be elected to any such office who is not in attendance upon the Annual Session and who has not been a member of the Association for the past two years.

Article IX.—Funds and Expenses.

Funds for meeting the expenses of the Association shall be arranged for by the House of Delegates by an equal per capita assessment upon each county society to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publication. Funds may be appropriated by the House of Delegates to defray the expenses of the Annual Session, for publication, and for such other purposes as will promote the welfare of the Association and profession.

Article X.—Referendum.

The General Meeting of the Association may, by two-thirds vote, order a general referendum upon any question pending before the House of Delegates, and the House of Delegates may, by a similar vote of its own members, or after a like vote of the General Meeting, submit any such question to the membership of the Association for a final vote; and if the persons voting shall comprise a majority of all the members, a majority of such vote shall determine the question and be binding upon the House of Delegates.

Article XI.—The Seal.

The Association shall have a common Seal with power to break, change or renew the same at pleasure.

Article XII.—Amendments.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the delegates registered at that Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session and that it shall have been sent officially to each component county society at least two months before the session at which final action is to be taken.

BY-LAWS.

Chapter I.—Membership.

Section 1. All members of the Component County Societies shall be privileged to attend all meetings and take part in all of the proceedings of the Annual Session, and shall be eligible to any office within the gift of the Association. Provided, that no physician may become a member of any county society unless he signs and keeps inviolate the following pledge:

I hereby promise upon my honor as a gentleman that I will not so long as I am a member of the Kentucky State Medical Association practice division of fees in any form; neither by collecting fees from others referring patients to me nor by permitting them to collect my fees for me; nor will I make joint fees with physicians or surgeons referring patients to me for operation or consultation; neither will I in any way, directly or indirectly, compensate anyone referring patients to me nor will I utilize any man as an assistant as a subterfuge for this purpose.

Sec. 2. The name of a physician upon the properly certified roster of members, or list of delegates, of a chartered county society which has paid its annual assessment, shall be *prima facie* evidence of his right to register at the annual session in the respective bodies of this Association.

Sec. 3. No person who is under sentence of suspension or expulsion from any component society of this Association, or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take part in any of its proceedings, until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of the society, he shall receive a badge which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of an annual session until he has complied with the provisions of this section.

Chapter II.—Annual and Special Sessions of the Association.

Section 1. The Association shall hold an annual session, meeting every third year in the city of Louisville, and the other two years at some point in the State fixed at the preceding annual session.

Sec. 2. Special sessions of either the As-

sociation or House of Delegates shall be called by the President at his discretion or upon petition of twenty delegates.

Chapter III.—General Meeting.

Section 1. The General Meeting shall include all registered members, delegates and guests, who shall have equal rights to participate in the proceedings and discussions; and, except guests, to vote on pending questions. Each General Meeting shall be presided over by the President or in his absence or disability, or upon his request, by one of the Vice-Presidents. Before it, at such time and place as may have been arranged, shall be delivered the annual address of the President, and the annual orations and the entire time of the Sessions as far as may be shall be devoted to papers and discussions relating to scientific medicine.

Sec. 2. The General Meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same; but any expense in connection therewith must first be approved by the House of Delegates.

Sec. 3. Except by special vote, the order of exercises, papers and discussions as set forth in the official program shall be followed from day to day until it has been completed.

Sec. 4. No address or paper before the Association, except those of the President and Orators, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes, nor more than once on any subject.

Sec. 5. All papers read before the Association shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done it shall not be published.

Chapter IV.—House of Delegates.

Section 1. The House of Delegates shall meet annually at the time and place of the Annual Session of the Association and shall so fix its hours of meeting as not to conflict with the first General Meeting of the Association, or with the meeting held for the address of the President and the annual orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as is consistent with the duties. But if the business interests of the Association and profession require, it may meet in advance or remain in session after the final adjournment of the General Meeting.

Sec. 2.—Each component county society shall be entitled to send to the House of Delegates each year one delegate for every 25 members, and one for each major fraction thereof, but each county society holding a charter from this Association, which has made its annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate. In case the regularly elected delegate is unable to attend the annual meeting of the Association, the President of the county society shall have the power to appoint an alternate, who shall have the rights and privileges of a delegate.

Sec. 3. A majority of the registered delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Association.

Sec. 4. It shall, through its officers, Advisory Council, and otherwise, give diligent attention to and foster the scientific work and spirit of the Association, and shall constantly study and strive to make each annual session a stepping stone to further ones of higher interest.

Sec. 5. It shall consider and advise as to the material interest of the profession, and of the public in those important matters whereing it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public-health legislation, and to diffuse popular information in relation thereto.

Sec. 6. It shall make careful inquiry into the condition of the profession of each county in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such county societies as already exist and for organizing the profession in counties where societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality and shall continue these efforts until every physician in every county of the State who can be made reputable has been brought under medical society influence.

Sec. 7. It shall encourage post-graduate work in medical centers as well as home study and research and shall endeavor to have the results of the same utilized and intelligently discussed in the county societies. With these ends in view, five years after the adoption of the By-Laws no voluntary paper shall be placed upon the annual program or be heard in the Association which has not first been heard in the county society of which the author is a member.

Sec. 8. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitu-

tion and By-Laws of that body in such a manner that not more than one-half of the delegates shall be elected in any one year.

Sec. 9. It shall upon application provide and issue charters to county societies organized to conform to the spirit of the Constitution and By-Laws.

Sec. 10. In sparsely settled sections it shall have authority to organize the physicians of two or more counties to be designated by hyphenating the names of two or more counties so as to distinguish them from district and other classes of societies and these societies, when organized and chartered shall be entitled to all the privileges and representation provided herein for county societies, until such counties may be organized separately.

Sec. 11. It may divide the counties of the State into Councilor Districts, and, when the best interests of the Association and profession will be promoted thereby, organize in each district a medical society, to meet midway between the Annual Sessions of the Association, and members of the chartered county societies and none other shall be members in such district societies. When so organized from the Presidents of such district societies shall be chosen the Vice Presidents of this Association and the Presidents of the county societies of the district shall be the Vice Presidents of such district societies.

Sec. 12. It shall have authority to appoint committees for special purposes from among members of the Association who are not members of the House of Delegates, and such committee may report to the House of Delegates in person, and may participate in the debate therein.

Sec. 13. It shall approve all memorials and resolutions issued in the name of the Association before the same shall become effective.

Sec. 14. It shall present a summary of its proceedings to the last general meeting of each annual session, and shall publish the same in the JOURNAL.

CHAPTER V.—ELECTION OF OFFICERS.

Section 1. All elections shall be by secret ballot, and a majority of the votes cast shall be necessary to elect, provided, however, that when there are more than two nominees, the nominee receiving the least number of votes on the first ballot shall be dropped and the balloting continue until an election occurs in like manner.

Sec. 2. Any member known to have directly or indirectly solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

Sec. 3. The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the last day of the General Session.

Sec. 4. Nominations for President shall be called for by counties.

CHAPTER VI.—DUTIES OF OFFICERS.

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver an annual address at such time as may be arranged; shall give a deciding vote in case of a tie, and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and so far as practicable, shall visit by appointment, the various sections of the State and assist the Councilors in building up the county societies and in making their work more practical and useful.

Sec. 2. The Vice-Presidents shall assist the President in the discharge of his duties. In the event of his death, resignation or removal the Council shall elect one of the Vice-Presidents to succeed him.

Sec. 3. The Treasurer shall give bond for the trust imposed in him whenever the House of Delegates shall deem it requisite. He shall demand and receive all funds due the Association, together with the bequests and donations. He shall, under the direction of the House of Delegates, sell or lease any estate belonging to the Association, and execute the necessary papers; and shall, in general, subject to such direction, have the care and management of the fiscal affairs of the Association. He shall pay money out of the Treasury, only on written order of the President, countersigned by the Secretary; he shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of funds in his hands.

Sec. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend all meetings of the Association and of the House of Delegates and he shall keep minutes of their respective proceedings in separate record books. He shall charge upon his books the assessments against each component county society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong

to the Treasurer and shall keep account of and promptly turn over to the Treasurer all funds of the Association which come into his hands. He shall provide for the registration of the members and delegates at the Annual Sessions. He shall keep a card-index register of all the legal practitioners of the State by counties, noting on each his status in relation to his county society, and upon request shall transmit a copy of this list to the American Medical Association for publication. In so far as it is in his power he shall use the printed matter, correspondence and influence of his office to aid the Councilors in the organization and improvement of the county societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall act as secretary of the Committee on Scientific Work. He shall be editor of the KENTUCKY MEDICAL JOURNAL. He shall employ such assistants as may be ordered by the Council or the House of Delegates. He shall annually make a report of his doings to the House of Delegates.

In order that the Secretary may be enabled to give that amount of time to his duties which will permit of his becoming proficient it is desirable that he shall receive some compensation. The amount of his salary shall be fixed by the House of Delegates.

CHAPTER VII.—COUNCIL.

Section 1.—The Council shall hold daily meetings during the annual session of the Association and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the annual session of the Association for re-organization and for the outlining of the work for the ensuing year. At this meeting it shall elect a Chairman and Secretary and it shall keep a permanent record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates at such times as may be provided, which report shall include an audit of the account of the Secretary and Treasurer and other agents of this Association, and shall also specify the character and cost of all the publications of the Association during the year, and the amount of all other property belonging to the Association or under its control, with such suggestions as it may deem necessary. In the event of a vacancy in any office the Council may fill the same until the next annual election.

Sec. 2. Each Councilor shall be organizer, peacemaker and censor for his district. He shall visit each county in his district at least once a year for the purpose of organizing component societies where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. He shall make an annual report of his doings, and of the condition of the profession of each county in his district to each annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor in the line of the duties herein imposed may be allowed by the House of Delegates upon a proper itemized statement, but this shall not be construed to include his expenses in attending the annual session of the Association.

Sec. 3. Collectively the Council shall be the board of Censors of the Association. It shall consider all questions involving the right and standing of members, whether in relation to other members, to the component societies, or to this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a county society upon which an appeal is taken from the decision of an individual Councilor. Its decision in all such cases shall be final.

Sec. 4. The Council shall have the right to communicate the views of the profession and of the Association in regard to health, sanitation and other important matters to the public and the lay press. Such communications shall be officially signed by the chairman and secretary of the Council, as such.

Sec. 5. The Council shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Association, and shall have authority to appoint such assistants to the editor as it deems necessary. It shall manage and conduct the KENTUCKY MEDICAL JOURNAL, which is the organ of the Association, and all money received by the JOURNAL, the Council or any officer of the Association, shall be paid to the Treasurer of the Association on the first of each month.

Sec. 6. All reports on scientific subjects and all scientific discussions and papers heard before the Association shall be referred to the KENTUCKY MEDICAL JOURNAL for publication. The editor, with the consent of the Councilor for the District in which he resides may curtail or abstract papers or discussions, and the Council may return any paper to its author which it may not consider suitable for publication.

Sec. 7. All commercial exhibits during the annual session shall be within the control and direction of the Council.

Chapter VIII.—Committees.

Section 1. The standing committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Medical Education.

A Medico-Legal Committee.

A Committee on Arrangements, and such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members of which the President-elect shall be a member and Chairman, and the Secretary shall be a member and Secretary, and shall determine the character and scope of the scientific proceedings of the Association, subject to the provisions or the instructions of the House of Delegates or of the Association, or to the provisions of the Constitution and By-Laws. Thirty days previous to each annual session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented, which shall be adhered to by the Association as nearly as practicable.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Association in securing the enforcing legislation in the interest of the public health and scientific medicine. It shall keep in touch with the profession and public opinion, shall endeavor to shape legislation so as to secure the best results for the whole people, and shall utilize every organized influence in local, state and national affairs and elections. Its work shall be done with dignity becoming a great profession and with that wisdom which will make effective its work and influence. It shall have authority to be heard before the entire Association upon questions of great concern at such times as may be arranged during the annual session.

Sec. 4. The Committee on Arrangements shall consist of the component society in the territory in which the annual session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meeting-places of the Association and of the House of Delegates, and of their respective committees, and shall have general charge of all arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the session as occasion may require.

Sec. 5. The Medico-Legal Committee shall consist of three members, one of whom, the Chairman, shall be elected by the Council for five years, and the Secretary and Treasurer shall be the other two members *ex officio*. This committee shall select and fix the compensation for an attorney, who shall act as General Counsel, and, if required, additional local counsel. The Association through this Committee shall defend its members who are in good standing against unjust suits for malpractice.

Chapter IX.—Assessments and Expenditures.

Section 1. The assessment of three dollars per capita on the membership of the component societies is hereby made the annual dues of this Association. The Secretary of each county society shall forward its assessment together with its roster of all officers and members, lists of delegates, and list of non-affiliated physicians of the county to the Secretary of this Association on the first day of January in each year.

Sec. 2. Any county society which fails to pay its assessment, or make the report required, on or before the first day of April in each year, shall be held as suspended, and none of its members, or delegates shall be permitted to participate in any of the business or proceedings of the Association or of the House of Delegates until such requirements have been met.

Sec. 3. All motions or resolutions appropriating money, shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Council and House of Delegates.

Chapter X.—Rules of Conduct.

The principles set forth in the Principles of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

Chapter XI.—Rules of Order.

The deliberations of this Association shall be governed by parliamentary usage as contained in Roberts' Rules of Order, unless otherwise determined by a vote of its respective bodies.

Chapter XII.—County Societies.

Section 1. All county societies now in affiliation with the State Association or those that may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and

By-Laws, shall, upon application to the House of Delegates, receive a charter from and become a component part of this Association.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a medical society shall be organized in every county in the State in which no component society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the House of Delegates and shall be signed by the President and Secretary of this Association. The House of Delegates shall have authority to revoke the charter of any component county society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one component medical society shall be chartered in any county. Where more than one county society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the District if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. Each county society shall judge of the qualification of its own members, but, as such societies are the only portals to this Association, every reputable and legally registered physician who is practicing, or who will agree to practice, non-sectarian medicine shall be entitled to membership. Before a charter is issued to any county society, full and ample notice and opportunity shall be given to every physician in the county to become a member.

Sec. 6. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Council, which, upon a majority, may permit him to become a member of an adjacent county society.

Sec. 7. In hearing appeals the Council may admit oral or written evidence as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual councilors in district and county work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. When a member in good standing in a component society moves to another county in the State, his name, upon request shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

Sec. 9. A physician living on or near a county line may hold membership in that county most convenient for him to attend, on permission of the society in whose jurisdiction he resides.

Sec. 10. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material conditions of every physician in the county; and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. Frequent meetings shall be encouraged, and the most attractive programs arranged that are possible. The younger members shall be especially encouraged to do post-graduate and original research work, and to give the society the first benefit of such labors. Official position and other preferences shall be unstintingly given to such members.

Sec. 12. At the time for the annual election of officers each county society shall elect a delegate or delegates to represent it in the House of Delegates of this Association in the proportion of one delegate to each twenty-five members or major fraction thereof, and the secretary of the society shall send a list of such delegates to the Secretary of this Association at least sixty days before the annual session.

Sec. 13. The Secretary of each county society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State, and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose, to the Secretary of this Association, on the first day of January of each year, or as soon thereafter as possible, and at the same time that the dues accruing from the annual assessment are sent in. In keeping such roster the Secretary shall note any changes in the personnel of the profession by death, or by removal to or from the county, and in making his annual report he shall be certain to account for every physician who has lived in the county during the year.

Sec. 14. The Secretary of each county society shall report to the KENTUCKY MEDICAL JOURNAL full minutes of each meeting and forward to it all scientific papers and discussions which the Society shall consider worthy of publication.

Chapter XIII.—Amendments.

These By-Laws may be amended by any annual session by a two-thirds vote of all the delegates present at that session, after the amendment has laid on the table for one day.

REPORT OF THE COUNCIL.

To the House of Delegates:

During the past year the Council has felt the varying problems presented by the greatest mobilization of members of our profession for the sanitation and medical and surgical care of an army in the history of the world; by the most fatal pandemic of an infectious disease which has even confronted a profession or people, and this, at the same time that nearly one-half the physicians of Kentucky were directly or indirectly, entirely occupied with the war; and by a spectacular demobilization and return to civil occupation of a medical corps which has earned the gratitude and received the thanks of not only the nation but of the whole world, this demobilization taking place amidst a new order of things where rising costs and reducing values are equally appalling and disconcerting.

From which ever viewpoint the individual members of the medical profession have approached each of these tremendous problems their optimism and their competency has only been limited by its size and difficulty. Whatever personal or professional sacrifice has been necessary has been ungrudgingly made. Under pre-war conditions a medical practice was a peculiarly personal asset, so personal that it could be sold. The number of physicians who returned to find their clientele dissipated, their professional life-clock set back to its starting point can never be accurately computed. On the other hand the great majority of those removed from their homes by the war or the epidemic find themselves better qualified, broadened, with greater usefulness than before, and have been welcomed by former patients and their professional brethren with open arms.

It is peculiarly the province of the profession to see that so far as possible the *status quo ante* be preserved. Where a man sacrificed position, location or practice to serve his country he should be restored to the same position, location or practice unless he can secure a better one without himself displacing another with like deserts. In Kentucky, up to the present time there has been but a single instance brought to the attention of the Council where this principle has not been recognized. It is right, and, therefore, it must be done.

The record of the physicians of Kentucky in the Great War is glorious. Practically without exception, every one who should have gone into the Army did so. Not only this, but many remained at home protestingly—anxious to go but willing to stay because the Council felt that they were essential to the civil life of their communities. This applies especially to the medical members of the local draft and advisory boards. As essential to the successful prosecution of the war as the doughboys at the front, these men quietly performed a patriotic service of the highest value without hope of preferment or recognition.

Republics are notoriously ungrateful. While the profession in no other State deserved nor received greater recognition from the Surgeon General, and while more promotions in proportion to their numbers were earned by and given to our members than to those of other states, it is to be regretfully recorded that a majority of the medical officers who served through the War were never promoted. This was due to several causes. In times of peace most of the regular medical corps had too little to do. For their salvation paper work was invented and too many of them knew little else. Most of them were very young men, as new to military service as the Reserve officers and, yet, of a sort of necessity which must be recognized, because they are making a life work of positions that most active physicians would not have, they receive routine promotions and without a tithe of the experience or qualifications frequently possessed by their Reserve subordinates, were in a position to make the latter's service unnecessarily irksome and unsatisfying. The attitude of General Pershing delayed or prevented meritorious promotions in the medical corps of the Expeditionary Forces. Of course all this would have been remedied had there been more time. While, to the individual treated unjustly, this affords slight recompense, the glorious record of the medical profession as a whole mitigates their lack of recognition by line officers too busy with their own difficulties to recognize the merits of others. The greatest medical corps in the world was organized, mobilized, trained and equipped in record time. The most efficient medical service ever given a country in time of war was provided. There is glory enough in it for every one, and, as time passes, the temporary differences in rank will disappear and every physician who was in the great conflict will be recognized as one of those contributing to the final victory, not only over

the hated Hun but over preventable disease and death.

It cannot be too often repeated to our friends and to the public that the patent medicine and other quack interests, including the uneducated and untrained sects which clamor so loudly for recognition for pay, were conspicuously excluded from any contact with our soldier boys. How long will the newspapers and people generally permit themselves to be exploited by these meticulous frauds at the expense not so much of the legitimate profession of healing as at the expense of the people who can only slowly be educated that their studiously misleading claims are the merest shams. That enough money is spent by Kentuckians each year for patent medicines that are worse than worthless and valueless to pay all the taxes paid the State is sufficient indictment to make some thoughtful statesman start a campaign to lead this people out of their Egypt of quackery, waste and ignorance.

In many other ways the lessons of the war must be brought home to those who remained behind. Typhoid fever, the scourge of all armies of history, was conspicuously absent in this war. Why? Because every soldier was completely innoculated and soil pollution was prevented. It is highly probable that not a single case of hookworm disease was contracted by an American soldier. Why? Because soil pollution was prevented. Yet in Kentucky this year there will be more deaths from typhoid fever than in the entire allied forces during the war. Why? Because soil pollution is not prevented and our people are not innoculated. Thousands of Kentucky children will develop hookworm disease this year. Why? Because soil pollution is not prevented. Again and again, why? Because it is no one's job to prevent it. It must be recognized that health costs money, and, until it is made the all-time business of a trained group of coordinated, hardworking, expert sanitary laborers to perform those community sanitary functions which the individual cannot economically nor adequately perform for himself and to educate those willing and to force those unwilling to do the things each individual must do for themselves to secure conditions and surroundings which promote good health, the destructive drain on Kentucky's greatest resource, its men, women and children, caused by preventable disease and unnecessary death must continue.

The recent epidemic of influenza which swept the country was appalling and terrifying. Disease, death, horror were but slightly assuaged by the appealing mercy with which the medical and nursing profession and the Red Cross tried to lessen its ravages. At first stunned by its malignant enormity, it is now our duty to calmly consider this invasion of a foreign foe and to devise practical means against its repetition. Here, as everywhere in the interesting preventive side of medicine, it must be recognized how pitifully we are undermanned. Had there been an adequate personnel in the quarantine service of our federal health service at Boston and other ports and sufficient housing for the sick and contacts who disembarked from ships from Europe, it must be recognized that there would have been no epidemic in the United States. We must also remember that such a personnel properly coordinated and effectively distributed amongst the states in ordinary times—speaking from a health standpoint—would soon enable us to prevent most of the ravages of the now common preventable diseases, but, until we have realized ourselves that it is cheaper, easier, pleasanter and more profitable to be well and useful than to be unnecessarily sick and have taught these things to the people who are dependent upon us for information along these lines, there is no hope that sufficient funds will be appropriated to provide such a personnel as is necessary.

It has become popular to deride and decry politicians and political methods. It is just as important to remember that there are good and bad politicians and to learn to distinguish between them and their methods as that there are good and bad doctors, or storekeeper or farmers or any other avocation or profession. The profession and people of Kentucky must remember that every law placed on the statute books are enacted by politicians. The Council for many years has come in contact with the General Assembly of Kentucky. Most of its members have been as anxious to do right as we have. Overwhelmed frequently by the multitude of subjects before them and the too short time provided by our archaic constitution for their consideration, they too frequently are the objects of an intense criticism which would have been unnecessary had their critics been forehanded in offering constructive and instructive advise while important measures were in the formative stage. If the unwise and unjust things frequently said about our legislators were true, then, indeed, representative institutions would be a failure. Your senators and your representatives are, as a rule, open minded and are glad to respond to intelligently expressed suggestions from those of their constituents who are really interested. It is not fair to ask Mr. Senator to vote for or against a particular measure and then criticise him if he fails

to heed the request, unless the suggestion is accompanied by a reasoned, thoughtful exposition of the grounds for your request. When such an appeal is made one receives a reply in like tone and one's suggestions are always courteously considered. These thoughts are expressed that individual members of the profession may explain to their elected representatives in the State's law-making body the altruistic purposes and unselfish aims of organized medicine. If the physicians of each county will attend promptly to this very important matter there will be little danger from the small coterie of selfish and designing men who seek to wrest control of the health and medical organizations from the profession, and, under the cloak of an alleged democracy, with the "holier than thou" cry of the hypocritical demagogue, try to form the kind of machine which would help them and their kind to reap a material reward for their villiany and treachery.

The profession of the State must understand, and must teach the people that it is responsible for the health administration of the Commonwealth. The State Board of Health is really selected by this organization of experts and it is up to us as a responsible body to continue to nominate physicians of the highest character of those who have heretofore conducted this Board. The thoughtless or the designing sometimes criticise this Association and the State Board of Health because they have built up strong alliances with the State Federated Women's Clubs, with the Bar Association, the Press Association, the Farmers' Institute, the Grange, the Society of Equity, the Red Cross, the Tuberculosis Association, the State Welfare Agencies, the Federation of Labor, the Pharmaceutical Association and all of the other State agencies interested in the health and welfare of the people. It seems absurd, but the members of the General Assembly have been warned not to take the advice of members of these great organizations in regard to legislation. We point with pride to the support we have received in the past from these great bodies. We have earned it by our constant labors for the people of the State. Unlike other baseless charges launched by the interested few who have attacked the medical organization of Kentucky, this charge is true. We plead guilty and we are delighted that we have, as we have tried to earn, the support of every well wisher of Kentucky and her people.

During the war and the epidemic meetings of the county societies have necessarily been less frequent. Now is the time for a revival of interest, with the purpose of considering not only the advances in scientific medicine, especially in internal medicine, in the special branches of surgery, including roentgenology, and in early diagnosis; but also all the complex medico-sociologic questions arising as a result of the removal of physicians from the country to the city due to the too rapid raising of the standards of education and the reduction of both opportunity and income of physicians in many sections. In addition the necessity for recognition of the already patent fact that preventive medicine will demand that a much greater number of physicians be trained, must be emphasized.

Many of these fundamental matters were discussed last year and several paragraphs of that report are repeated practically unchanged because they merit your serious and continued study.

A PLEA FOR A STABILIZED, PERMANENT MEMBERSHIP.

While the total number of members of the State Association varies so little from year to year, a study of the society history of either counties or individuals shows that although the membership of about sixty per cent of the profession in most counties, and in the State as a whole, is permanent, with their names always on the rolls and each to be depended upon to do his or her part of any duty, the balance, to a per cent which so far as the history of our organization goes, can be counted on with equal confidence to drift in and out of their societies in such a way as to maintain the annual average in a way that is likely to mislead and cause those conducting the organization work to overlook this important element, and fail in their duty to it. While the individuals composing this drifting class, good men as a rule, are out of the societies, often two years in three, they do not receive the JOURNAL, or otherwise keep in touch with professional affairs and advances, are not entitled to reciprocity with other states, to appointments as members of county or city boards of health or as insurance examiners, and are not protected against malpractice suits; in a word get none of the benefits of the county, state or national organization so prized by most of us, and, in consequence, in a great measure, become the unsuccessful and disgruntled minority so important to reach and deal with for their own and the profession's welfare, and still more for the safety of the people dependent upon them as family physicians.

PROVISION AGAINST DANGERS.

That those who framed our plan of organization fully appreciated these dangers in advance, and made every possible provision against them, will be readily shown by such

a study of the various constitutions and by-laws of the entire system, from the county societies up to the American Medical Association, as every one should give them who desires to take an intelligent part in this work. In fact, it will be found that under the new order of things one of the chief functions of the higher organizations, within their respective spheres, was and is, to maintain and act as a bond of union between the county societies. One of their principal uses and powers through the well-devised delegate and councilor systems to collect and concentrate the influence and represent the opinion of a united profession, as developed and expressed in the county societies, on all the great questions relating to the educational and scientific advancement of the profession itself, or for the protection and promotion of the public health interests of the whole people. Through the same system they may be made equally efficient in radiating and diffusing the spirit of scientific investigation, and the generous emulation and mutual respect and forbearance engendered by the contact of the most advanced and liberal members gathered at the annual meetings, back through the system of delegates and organizations to the most remote societies. Through such action and reaction of enlightening and ennobling influences, and the systematic supervision provided through the councilors for every county in the State, aided by THE JOURNAL sent free to all members, all possible safeguards are made for the permanency and efficiency of these organization, in theory. With such incentives, instruction and machinery, this association must deal with the problem on the broad yet painstaking lines which will now be considered.

ESSENTIAL FORCES AT WORK.

While provision is made for councilor district societies and other details which may grow in importance in the future, there are five essential features in the plan on which both the immediate success and the permanency of the work of this association, and the profession depend. Named in the order of their importance these are:

1. The County Society, as the unit of organization, and the foundation of, and the door to, everything above it. 2. A Council, selected from the profession at large to represent and act for the Association under well-defined restrictions in the interval of the annual meetings, and whose individual members are charged with the organization, supervision and well-being of the county societies within their respective districts. 3. A House of Delegates, composed of a limited number of specially selected representatives from each county society, as the business body of the Association. To it is committed the duty of fostering in every legitimate way the scientific, legislative and material interests of the profession in their respective counties and at the annual meetings. 4. The General Meeting, made up of all the members of all the county societies who will attend, which can devote its entire time and attention to the reading and discussion of papers, and reports of scientific research and investigation. 5. THE JOURNAL, published under the auspices of the Association, and sent free to all members as a means of constant communication between the county societies, and between them and the councilors and other officials, as well as for the early publication and wide distribution of the transactions.

COUNTY SOCIETIES.

All of these features or departments are so interdependent as to be essential to the complete and permanent organization contemplated, but it will be perceived at once that the county society is made the bed-rock on which the entire superstructure rests; that it is made the chief function of the individual councilors, provided for every district in the State, to see that these are organized for, and kept alive to, the best interests of the members composing them, and of the profession as a whole, that the influence of every officer and agency in the entire system is focused on and directed to the same end, and that all these are to be continued until every physician of every county, who can be made worthy of it, is brought under the educational and elevating influence of his county medical society. Such an organization of the profession as this is ideal, but is believed to be entirely possible, if this possibility and the necessity for it is once fully appreciated by the controlling influences in the State.

WHY SO DIFFICULT TO MAINTAIN.

For obvious reasons it has always been easy to induce leading men from widely separated sections to attend and keep up the interest in the national, state and even in district medical societies, but the problems to be faced in making the frequent meetings of county organizations, composed of those who have, or at least think they have, competing personal and professional interests, sufficiently interesting and harmonious to secure the requisite attendance, month after month, and year after year, are far different. In reality all their interests are mutual. In the best and broadest sense what benefits or hurts one benefits or hurts all. To convince them that this is true is the problem still before the profession. It has been done in a few states, and in

some counties in all the states, and after a large experience the Council feels assured that it is possible everywhere. "What men have done other men can do." The difficulties are on the surface and will disappear in the face of a full recognition of their nature, and of a kind but frank and honest discussion.

MATERIAL AND BUSINESS INTERESTS.

It is mainly this spirit, and the resulting conditions, which cause so much poverty in the profession, interfering with it in every business aspect, just as the loss of public respect and confidence directly traceable to it accounts for most of the difficulties in securing needed medical and health legislation, and in enforcing such laws when enacted.

Then, too, physicians are proverbially poor business men. As has been shown, this has resulted largely from the failure of even the best medical schools to give any instruction on the subject to start with, supplemented by lack of organization, and false ideas as to a conflict of interest between local men. There has been a singular delicacy of sentiment, too, about the propriety of discussing this subject either in medical societies or before the public. All this must be changed. The time has come for the public to understand that under modern conditions a physician who is a failure financially can not keep himself qualified and equipped for safe practice, and that, in consequence, low prices and rate-cutting are fruitful sources of danger to the public. Some voluntary understanding as to charges in each community is proper and necessary, but in order to prevent possible legal or other complications, as well as to comply with the by-laws, this should be arranged by the profession of a county acting in their individual capacities and not as a society organization. A medical trust would be as illegal and un-American as any other kind of trust. Besides experience has shown that even the best-intentioned attempts to enforce such agreements, as a society, by expulsion or other penalties, have always resulted in further dissensions, with public sentiment and advantage on the side of the less scrupulous. Moral suasion, backed by an organized profession and an educated public sentiment, is the only remedy here as in all similar matters. For these reasons the by-laws also provide that "each county society shall set apart at least one meeting in each year for a discussion of the business interests of the profession of the county," and for efforts for a proper instruction of the public on the subject. At this meeting some leading members who have been most successful along just and ethical lines should open the discussion, which should be so directed as to indicate the best and most practical methods for the guidance of all. It should include the frequency and best methods of making collections; the expediency of a common collector for a number of physicians, on a salary and with a separate office, who can devote his entire time to their service; of the advantage of an office at the residence, or the economy of a joint office with different hours, or a common waiting room with individual consulting rooms, with the same office attendant and telephone, of a hospital owned or directed in whole or in part by the profession; of the advisability of taking advantage of modern pharmaceutic conveniencies, of dispensing their own drugs, and all similar questions, so far as they are adapted to the conditions and needs of that society.

In all of these matters the interests of the public should be fully and fairly considered, and at such meetings leading laymen may often be invited to take part in the discussions with profit to all. In fact, the mutual interests and obligations of the profession and public should be iterated and reiterated as a means of education for both. The best and highest sources of information are now open and reasonably accessible to all medical men in this country, and every community is entitled to, and should have competent physicians, and the best and most approved treatment in their afflictions. Most people who are in moderate circumstances, and all in emergency sickness, must receive this at the hands of their home physicians or not at all. Through systematic organization alone is it possible to furnish the incentives and opportunities requisite for such ends, and organization is incomplete until this has been done. This instruction, whether at home or in medical centers, with the incident equipment essential to its utilization in practice, is expensive and the public should be educated to its interest and duty in such a support of the the profession as will enable its members to acquire them without depriving their families of the means of subsistence.

SOCIAL PROVISIONS.

The social features of the society should also receive more attention than in the past, probably at the hands of a permanent committee with talent, for such matters. Frequent and inexpensive lunches should be recognized as a legitimate and tasteful method of increasing the attendance and interest, and of promoting kind personal relations. In this respect the society should represent a gentlemen's club in its informal but dignified and respectful intercourse. It should be borne in mind by all concerned that members

will take the time and trouble to attend only so long as the meetings are made pleasant and instructive. Little fear need be entertained on these points, however, if the councilors, and through them the profession at large, can once be made to understand the character, spirit and advantages of the work, so that each officer and member may be induced to do his full part.

QUALIFICATIONS OF COUNCILORS.

On account of the important powers and duties imposed upon the Council as a body, and still more upon its individual members, for years to come at least, the office will be the most responsible one within the gift of the Association. Indeed, the inauguration and success of the entire work is so dependent on what he does that no man should accept the office who can not freely give the time and labor necessary to the efficient discharge of the duties. Every one who would qualify himself for the office should make a special study of the constitution and by-laws of this Association and of county societies. He should make himself familiar with the history of medicine, and especially with that of his own state and country. He should also inform himself as to the medical and health laws of the State. Joint meetings of the Council and State Board of Health should be held frequently in order that there may be that harmony of views and concert of action between those working for common ends essential to the best results. Representatives from the faculties of medical schools should be invited to such meetings for consultation as to the feasibility of establishing practical courses on ethics and business methods, as well as of having all advanced students advised as to the advantages of society membership and organization.

AN UNFORTUNATE CLASS.

In a like way will come up the question of the advisability of admitting or retaining in the membership those who have been more or less unethical and off color in the past. Each case of this kind will have to be considered and decided on its merits, but it should be done on liberal lines. In a county where no organization worthy of the name has existed, and where each physician has been forced to decide all the nice questions of professional conduct as they arose, on his individual and untrained judgment, this important part of medical education having been entirely neglected in most of our colleges, it will usually be found that there is no well-defined boundary between correct and incorrect methods except on the part of those governed by native gentlemanly instincts. It will often be found that lack of courtesy, or more or less vicious unprofessional methods, have been handed down in both town and country from generation to generation of physicians, and that those now in practice there are largely the victims of this inheritance. In all of these matters, as in the consideration of the sectarian problem, the profession is confronted by a condition, not a theory. Legally and in the public estimation these men are physicians, and the profession is held responsible for them whether or not. Most of them are not essentially bad. These things being true, it will usually be better to give all who will come in a cordial welcome, and for a united profession, kindly and in good faith, to encourage every effort they can be induced to make to refrain from methods into which they drifted through lack of training and environment for which they are not personally responsible. In regard to the whole subject of the admission of members, and still more of their treatment after admission, it should be urged that a spirit of conciliation be substituted for the old one of suspicion, selfishness and ostracism.

In handling all of these questions, and those concerned and affected by them, as in the discharge of his duties, the councilor will find constant need for a knowledge of human nature, especially as modified in the *genus homo medicus*, tact, sound judgment, and a never-failing good temper.

DIFFICULT BUT ALL IMPORTANT.

In explanation of why it has gone back to first principles in the methods and difficulties of this work, the Council insists upon the necessity for it, as emphasized by the experience of every one of its members in dealing with the problems in some of the counties of his district, not only this year, but every year, in contrast with the complete revolution which has taken place in adjoining counties where his efforts have succeeded. How far the benefits of such a system are to be extended to any particular county must be determined by its own profession, assisted by every possible influence from the outside, when needed. To say that much time and unceasing effort will be required to maintain such an organization in many counties, that many obstacles will be encountered, and that individuals will fail to do their duty or obstruct the work, is only to say that the undertaking is a vast one, that the agencies to be relied on are finite, and that it is subject to the vicissitude attending all human endeavor. Our contention is that it is worth all the time,

labor and money it will cost, and more. For ours is rapidly becoming a great science. Our leaders are among the greatest of living men either in peace or war. With proper ideals kept constantly before our young men, and the present facilities for attaining them, unknown to any other age, and impossible even to the older men of the present generation, with harmony and co-operation made possible and encouraged everywhere, and all supported by a public confidence, inevitable because it will be deserved, everything desirable will be brought within reach of the profession. The vexed problem of medical education can then be taken up with confidence, and justly and wisely solved. Provision for continuous scientific research, and for systematic collective investigation into the causes and prevalence of disease, can be made by national authority on the broad and generous lines demanded by the great interests involved. Constructive statesmanship can be substituted for the narrow, time-serving political methods of the present in municipal, state and national health affairs, and our profession, united, educated and ennobled, will come to occupy its rightful place as one of the greatest of forces for the protection and elevation of mankind.

A PLEA AND PLAN FOR A FULL, PERMANENT MEMBERSHIP.

Our Council has asked the Treasurer, Secretary and Auditor to report fully and in detail upon all of the financial affairs of the Association this year, in order that this report might be devoted to the even more important task of laying the foundation here to-day of a league offensive and defensive, composed of the delegates now present, the presidents and especially the secretaries of each county society and its permanent membership, and the councilors of the respective districts, for the purpose of conducting such a systematic campaign in each county, and for the entire State, as will reach and inspire every drifting and eligible non-member with such an appreciation of the inestimable privileges of belonging to and regularly attending his society that he will soon feel that nothing can compensate him for the loss of them; and, in return, we pledge every activity of this Association to such a study of the condition of the profession in each county as will enable it to assist each member in every relation and vicissitude of life which makes assistance desirable or necessary.

FISCAL AFFAIRS.

Exhibits "A" to "H" inclusive, relating to the financial affairs of the Association, are so plain that every member who will take the trouble to do so can easily trace the source of every dollar of income, to whom and for what service each expended dollar was paid, and how and in what the surplus is invested, that extended comments from me as to these matters would be superflous.

Respectfully submitted,

R. C. McCHORD, Chairman.

AUDITOR'S REPORT.

To the Council of the Kentucky State Medical Association:

GENTLEMEN:

At your request I have audited the books of your Treasurer, Dr. W. B. McClure, and your Secretary, Dr. A. T. McCormack, from September 1, 1918 to September 1, 1919, and beg to submit the following report:

Cash balance in Second National Bank, Lexington, Kentucky, to the credit of W. B. McClure, Treasurer		$5030.80
Less outstanding Checks, viz:		
No. 329—T. W. Singer, Chicago	$ 6.00	
No. 100—A. T. McCormack	125.00	
No. 101—L. H. South	50.00	
No. 102—Edith Landrum	75.00	
No. 103—W. C. Morris, P. M.	35.00	
No. 104—Bush & Krebs Company	6.56	297.56
Net cash balance, agreeing with Secretary		$ 4733.24
3 Liberty Bonds		3000.00
		$ 7733.24
Office Furniture, etc (See Exhibit "D")		922.39

Checks 100 to 104 inclusive are post-dated and are in the hands of the Secretary to be delivered when due.

I have carefully compared every item and checked same from every angle and find same correct and the books in balance and neatly kept.

A full history of the year's work is shown in detail and summary in the following exhibits, which have been checked and proved.

Very truly,

B. P. EUBANK, Auditor.

EXHIBIT "A"

Detailed Statement of Disbursements of W. B. McClure, Treasurer, Kentucky State Medical Association, each made on a Voucher Check signed by Dr. J. S. Lock, President, and Dr. A. T. McCormack, Secretary, and himself, from September 1, 1918, to September 1, 1919:

October 1.—VOUCHER CHECK NO. 1. $323.25
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary $125.00
To expenses to Annual meeting from Balboa Heights, Canal Zone 198.25
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK NO. 2. $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK NO. 3 $75.00
CLYDE W. HOWELL, Bowling Green.
To salary as Stenographer.

October 1.—VOUCHER CHECK NO. 4 $874.86
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.

July 12—To 2 phone messages	$ 1.20	
To 500 floor plans	3.50	
July 16—To Commercial exhibits	3.00	
To applications for space, 2 sides	4.50	
July 25—To 200 Badges	8.00	
To 7-gronp cuts	78.18	
July 29—To 500 Envelopes	1.00	
July 31—To 2250 Aug 1, 80-page JOURNALS	235.00	
To 2250 Envelopes	2.25	
To difference in cost of paper	31.20	
To 24 changes	4.80	
Aug. 31—To 2500 96-page Sept. 1st, JOURNALS	300.00	
To 2500 Envelopes	2.50	
To difference in cost of paper	37.20	
To 40 changes	8.00	
To making print cut	1.00	
To 1800 blank cards	2.60	
To 2000 No. 6 envelopes	4.00	
To 2000 4-page programs	12.00	
To 500 program booklets	14.00	
To printing apportionment	1.00	
To 2000 cards—punched and printed on two sides	10.00	
	$764.93	
By errors deducted	11.25	
	$753.68	
To 20 per cent commission on $605.90 (amount of bill after deducting difference in cost of paper and cuts)	121.18	

Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK NO. 5 $35.00
W. C. MORRIS, Postmaster, Bowling Green.
To postage due on JOURNAL.

October 1.—VOUCHER CHECK NO. 6 $15.00
CENTRAL PRESS CLIPPING SERVICE.
To clipping service May, June, July, August and September.

October 1.—VOUCHER CHECK NO. 7 $250.03
S. W. BASSETT COMPANY, Providence, R. I.

To 476 rolled gold buttons at .32	$152.32	
To 411 bars at .22	90.42	
To 3 per cent war tax	7.29	

Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK NO. 8 $32.15
ST. LOUIS BUTTON COOMPANY, St. Louis, Mo.
To service flag, August 22.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK NO. 9 $150.00
HON. FRED FORCHT, JR., Louisville.
To services rendered from January 1, 1918, to July 1, 1918.

October 1.—VOUCHER CHECK NO. 10 $25.00
HUNTER WOOD & SON, Hopkinsville.
To fee for services rendered in case of E. A. Adams vs. Dr. S. H. Williams.

October 1.—VOUCHER CHECK NO. 11 $5.05
C. R. CLARK, Clerk, Hopkinsville.
To fees, suit of E. A. Adams vs. Dr. S. H. Williams.

October 1.—VOUCHER CHECK NO. 12 $5.00
McLEAN & BOONE, Louisville.
To reporting case of Mrs. Jos. W. Harth vs. Dr. T. K. Van Zandt.

October 1.—VOUCHER CHECK NO. 13 $5.25
RODMAN W. KEENON, Clerk Frankfort.
To opinion in suit, South vs. Fish, Court of Appeals.

October 1.—VOUCHER CHECK NO. 14 $55.00
E. S. CARPENTER, Louisville.
To furnishing motion picture equipment and operator at Annual meeting, Sept. 4th and 5th.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK NO. 15 $4.40
UNIVERSITY BOOK STORE, Lexington.
To 500 envelopes for Dr. McClure, Treasurer.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 16 $6.75
DR. R. C. McCHORD, Lebanon.
To expenses, Councilor 6th District for 1918.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 17 $24.50
MAJOR W. O. OWENS, Washington, D. C.
To expenses to Annual meeting as Lecturer.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 18 $90.00
DR. EDWARD P. DAVIS, Philadelphia
To expenses to Annual meeting, on the program.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 19 $16.95
DR. J. E. WELLS, Cynthiana.
To expense as Councilor for year 1917-1918.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 20 $32.00
DR. W. B. McCLURE, Lexington.
To expenses as Treasurer, 1917-18 $ 29.00
To stamps 3.00

Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 21 $53.05
DR. W. W. RICHMOND, Clinton.
To expenses as councilor for year 1917-18.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 22 $26.00
DR. L. L. ROBERTSON, Middlesboro.
To expenses, Councilor for 11th District for year 1917-18.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 23 $20.50
DR. J. W. KINCAID, Catlettsburg.
To expenses as Councilor for the year 1917-18.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 24 $73.87
DR. J. S. LOCK, Maysville.
To expenses as Councilor for the year 1917-18.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 25 $45.62
MAJOR P. H. STEWART, Baltimore, Ma.
To expenses to Lonisville meeting as President of State Society for year 1917-18.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 26 $39.35
DR. D. M. GRIFFITH, Owensboro.
To expenses for 1917-18 as Councilor for 2nd District.
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 27 $54.50
MAYME SULLIVAN, Bowling Green.
To expenses for self, Miss Franklin and Miss Stiff, assistants at Annual meeting.
Total amount $ 29.50
To Honorarium 25.00
Approved by Council and ordered paid by House of Delegates.

October 1.—VOUCHER CHECK No. 28 $64.00
DR. J. N. McCORMACK, Bowling Green.
To expenses for 1917-18 as Councilor for Third District.
Approved by Council and ordered paid by House of Delegates.

November 1.—VOUCHER CHECK No. 29 $126.40
W. C. MORRIS, Postmaster, Bowling Green.
To 4000 3-cent stamped long envelopes.

November 1.—VOUCHER CHECK No. 30 $25.00
B. P. EUBANK, Bowling Green.
To auditing accounts for year 1918.

November 1.—VOUCHER CHECK No. 31 $128.50
DR. A. T. McCORMACK, Bowliug Green.
To salary as Secretary $ 125.00
To printing done at meeting 3.50

November 1.—VOUCHER CHECK No. 32 $58.64
DR. L. H. SOUTH, Bowling Green.
To salary, Business Manager of JOURNAL $ 50.00
To R. R. fare to and from Louisville, attending Annual meeting 8.64

November 1.—VOUCHER CHECK No. 33 $75.00
CLYDE W. HOWELL, Bowling Green.
To salary as Stenographer.

November 1.—VOUCHER CHECK No. 34 $686.45
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.

To 2450 88-page Oct 1, JOURNALS	$275.00	
By 20 errors in same		5.00
To difference in cost of paper	43.20	
To 2450 envelopes	2.50	
To 18 changes	3.60	
To 2400 80-page Nov. 1, JOURNALS	245.00	
By 17 errors in same		4.25
To 20 changes	4.00	
To 2400 envelopes	2.40	
To difference in cost of paper	48.50	
To 3000 letter heads, Secretary	12.00	
To 250 letter heads and 250 envelopes, Vice-Pres.	3.25	
To 250 letter heads and 250 envelopes 2nd Vice-President	3.25	
To 250 envelopes and letter heads for nine councilors	29.25	
To 500 letter heads and envelopes for Treasurer	4.75	
To 500 letter head sand envelopes for Prsident	4.75	
To 500 letter heads and envelopes for councilor 3rd District	4.75	

To 500 letter heads and envelopes for councilod 6th District 4.75
To 500 letter heads and envelopes for councilor 5th District 4.75

$695.70
Less errors 9.25

November 1.—Voucher Check No. 35 $12.50
AMERICAN SURETY COMPANY of New York.
To premium on Bond of $5000.00 (Dr. McClure, Treasurer) from Oct. 15, 1918 to Oct. 15, 1919.

November 1.—Voucher Check No. 36 $35.30
COURIER-JOURNAL JOB PRINTING COMPANY, Louisville.
To 2500 membership cards $ 35.00
To postage and insurance 30

November 1.—Voucher Check No. 37 $280.38
WILLIAM WHITFORD, Medical Reporter, Chicago.
To R. R. expenses to meeting $ 25.88
To reporting 4 days and 2 evenings 50.00
To transcript of minutes of House of Delegates, general sessions and discussions 204.50

Approved by Council and ordered paid by House of Delegates.

November 1.—Voucher Check No. 38 $148.37
SEELBACH HOTEL COMPANY, Louisville.
To rooms for exhibitors $ 54.00
To telephone 5.10
To material and labor 20.00
To electric wiring 30.00
To A. T. McCormack, room and meals 22.37
To J. G. Denhardt, room and meals 10.00
To food $2.60, messenger .20 2.80
To telephone 10
To W. Owen, room and meals 4.00

Approved by Council and ordered paid by House of Delegates.

December 1.—Voucher Check No. 39 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

December 1.—Voucher Check No. 40 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of Journal.

December 1.—Voucher Check No. 41 $75.00
CLYDE W. HOWELL, Bowling Green.
To salary as Stenographer.

December 1.—Voucher Check No. 42 $3.70
GRAHAM & LONGSTREET, Louisville.
To copy of depositions taken for plaintiff, 37 pages, Case of Jas W. Hackett vs. Dr. Frank Beard (Shelby County).

December 1.—Voucher Check No. 43 $300.10
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.
To 2300 December 1st 80-page Journals $240.00
To difference in cost of paper 46.45
To 18 changes 3.60
To 2300 envelopes 2.30
To difference cost setting index 10.50

$302.85
By 11 errors in Journal 2.75

January 1.—Voucher Check No. 44 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

January 1.—Voucher Check No. 45 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of Journal.

January 1.—Voucher Check No. 46 $75.00
CLYDE W. HOWELL, Bowling Green.
To salary as Stenographer.

January 1.—Voucher Check No. 47 $1.39
DR. W. B. McCLURE, Lexington.
To express charges on Liberty loans.

January 1.—Voucher Check No. 48 $100.12
W. C. MORRIS, Postmaster, Bowling Green.
To 2000 No. 8 stamped envelopes $ 65.12
To postage on Journals 35.00

February 1.—Voucher Check No. 49 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

February 1.—Voucher Check No. 50 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of Journal.

February 1.—Voucher Check No. 51 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

February 1.—Voucher Check No. 52 $678.50
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.
To 2300 January 1st 80-page Journals $240.00
To difference in cost of paper 46.45
To 17 changes 3.40
To 2300 envelopes 2.30
To twenty per cent added 48.00
To 2300 February 1st 90 page Journals $240.00

To difference in cost of paper 46.45
To 8 changes 1.60
To 2300 envelopes 2.30
To twenty per cent added 48.00

February 1.—VOUCHER CHECK Noo. 53 $100.00
SIMS & RODES, Bowling Green.
To attorneys fees in case of South vs. Fish, involving the legal status of the State Board of Health (Sub. Section 3, Section 2054, Chapter 65, Acts 1918).

March 1.—VOUCHER CHECK No. 54 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

March 1.—VOUCHER CHECK No. 55 $50.00
DR. L. H. SOUTH, Bowliug Green.
To salary as Business Manager of JOURNAL.

March 1.—VOUCHER CHECK No. 56 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

March 1.—VOUCHER CHECK No. 57 $150.00
HON. FRED FORCHT, JR., Louisville.
To services rendered from July, 1918 to Jan. 1st, 1919.

March 1.—VOUCHER CHECK No. 58 $100.00
HOWES & HOWES, Attorneys.
To services rendered in suit of Gertrude Hitchcock vs. Holbrook.

March 1.—VOUCHER CHECK No. 59 $2.00
STATE MEDICAL ASSOCIATION OF TEXAS.
To annual subscription for Texas State Journal of Medicine.

March 1.—VOUCHER CHECK No. 60 $126.00
TAYLOR, EAVE & SPARKS
Jan. 9th, 1917—To check to sheriff of Hopkins County for serving notices and subpoenas $.50
April 16—To check to sheriff of Hopkius Sounty for serving notices and subpoena 50
To fee Annie Tapp against you in the Muhlenberg Circuit Court for dam ages against you 125.00

March 1.—VOUCHER CHECK No. 61 $1.00
SIMPSON COUNTY MEDICAL SOCIETY.
To payment of County Medical Society dues of J. C. Douglas and J. G. Gray.

March 1.—VOUCHER CHECK No. 62 $10.00
AMERICAN BLUE BOOK PUBLISHERS.
To one copy of "American Blue Book, Library Edition.

April 1.—VOUCHER CHECK No. 63 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

April 1—VOUCHER CHECK No. 64 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL.

April 1.—VOUCHER CHECK No. 65 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

April 1.—VOUCHER CHECK No. 66 $150.00
E. T. WESLEY, Attorney, Somerset.
To attorney's fee in case of Dicey Hall vs. Dr. A. W. Cain.

April 1.—VOUCHER CHECK No. 67 $11.00
DR. W. B. McCLURE, Lexington.
To R. R. fare, hotel bill, and incidental expenses to meeting of council.

April 1.—VOUCHER CHECK No. 68 $1.35
THE BOOK SHOP BINDERY, Chicago, Ill.
To binding one KENTUCKY MEDICAL JOURNAL.

April 1.—VOUCHER CHECK No. 69 $668.65
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.
Feb. 27—To 2300 February issue, 80- pages $240.00
To difference in cost of paper 46.45
To 14 changes 2.80
To 2300 envclopes 2.30
To twenty per cent added 48.00
March 29—To 2300 March issue, 80-pages 240.00
To difference in cost of paper 46.45
To 12 changes 2.40
To twenty per cent added 48.00
$676.40
By errors deducted 7.75

May 1.—VOUCHER CHECK No. 70 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

May 1.—VOUCHER CHECK No. 71 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL.

May 1.—VOUCHER CHECK No. 72 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

May 1.—VOUCHER CHECK No. 73 $50.00
WILLIS & DAVIS, Ashland.
To services in case of Hogge against Allen in the Boyd County Circuit Court.

May 1.—VOUCHER CHECK No. 74 $2.00
D. C. BRENNER & COMPANY, Louisville.
To one fac simile for Dr. J. S. Lock.

May 1.—VOUCHER CHECK No. 75 $25.00
W. C. MORRIS, Postmaster, Bowling Green.
To postage due on JOURNAL.

May 1.—VOUCHER CHECK No. 76 $300.75
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.
To 2300 May issue $210.00
To difference in cost of paper 37.15
To 2300 envelopes 2.30
To twenty per cent added 42.00
To drawing and cut floor plan 9.90
To two cuts and postage 6.15
$307.50
By errors deducted 6.75

June 1.—VOUCHER CHECK No. 77 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

June 1.—VOUCHER CHECK No. 78 $60.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL $ 50.00
To expenses to Trenton 10.00

June 1—VOUCHER CHECK No. 79 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

June 1.—VOUCHER CHECK No. 80 $3.58
BUSH & KREBS COMPANY, Louisville.
To touching up illustration of ear and one half-tone of same and postage.

June 1.—VOUCHER CHECK No. 81 $35.00
WOODWARD & KIRK.
To attorney fees in case of B. T. Morris vs. Oscar Allen in Ohio County Circuit Court.

June 1.—VOUCHER CHECK No. 82 $150.00
MR. S. Y. TRIMBLE, Hopkinsville.
To cost in full in case of Erselitian vs. Stephens.

June 1.—VOUCHER CHECK No. 83 $89.92
MR. KELLY FISH.
To cost in full in case of Abner vs. Dr. J. E. Lemming.

June 1.—VOUCHER CHECK No. 84 $6.00
DR. EDWARD DAVENPORT, Secretary.
To overpayment of dues for Livingston County Medical Society.

June 1.—VOUCHER CHECK No. 85 $1.50
DR. J. M. TAYLOR, Secretary.
To overpayment of dues for Barren County Medical Society.

June 1.—VOUCHER CHECK No. 86 $6.00
DR. BOB C. OVERBY, Secretary.
To overpayment of dues for Ballard County Medical Society.

June 1.—VOUCHER CHECK No. 87 $290.60
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.
To 2300 June 1st issues $210.00
To difference in cost of paper 37.15
To 2000 envelopes 2.00
To twenty per cent added 42.00
To 16 changes 3.20
$294.35
By errors deducted 3.75
$290.60

July 1.—VOUCHER CHECK No. 88 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

July 1.—VOUCHER CHECK No. 89 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL.

July 1.—VOUCHER CHECK No. 90 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

July 1.—VOUCHER CHECK No. 91 $100.00
O. H. WADDLE & SONS.
To payment for services in case of Brown vs. Dr. T. J. Acton.

July 1.—VOUCHER CHECK No. 92 $175.00
E. B. BEARD.
To attorney's fees in case of Hackett vs. Beard.

July 1.—VOUCHER CHECK No. 93 $288.70
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green
To 2300 copies July issue $210.00
To difference in cost of paper 37.15
To 2300 envelopes 2.30
To 20 changes 4.00
To twenty per cent added 42.00
$295.45
Less errors 6.75
$288.70

August 1.—VOUCHER CHECK No. 94 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Secretary.

August 1.—VOUCHER CHECK No. 95 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL.

August 1.—VOUCHER CHECK No. 96 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

August 1.—VOUCHER CHECK No. 97 $177.50
HON. FRED FORCHT, JR., Louisville.
To services rendered from Jan. 1st to July 1st, 1919 $150.00
To services and expenses to Shelbyville 27.50

August 1.—VOUCHER CHECK No. 98 $5.00
MARIA ELLIOTT, Somerset.
To one day's work in court in the case of Essell Brown, by next friend, vs. Dr. J. T. Acton.

August 1.—VOUCHER CHECK No. 99 $276.45
TIMES-JOURNAL PUBLISHING COMPANY, Bowling Green.

To 2300 copies 64-page August issue	$210.00
To difference in cost of paper	37.15
To 2300 envelopes	2.30
To 15 changes	3.00
To twenty per cent added	42.00
	$294.45
Less errors	8.00
	$286.45
Less $10.00 failing to publish Dr. L. K. Baldanf article	10.00
	$276.45

September 1.—VOUCHER CHECK No. 100 $125.00
DR. A. T. McCORMACK, Bowling Green.
To salary as Stenographer.

September 1.—VOUCHER CHECK No. 101 $50.00
DR. L. H. SOUTH, Bowling Green.
To salary as Business Manager of JOURNAL.

September 1.—VOUCHER CHECK No. 102 $75.00
EDITH LANDRUM, Bowling Green.
To salary as Stenographer.

September 1.—VOUCHER CHECK No. 103 $35.00
W. C. MORRIS, Postmaster, Bowling Green.
To postage due on JOURNAL.

September 1.—VOUCHER CHECK No. 104 $6.56
BUSH & KREBS COMPANY, Louisville.
To 2 half-tone portraits and postage.

$10969.99

EXHIBIT B

RECEIPTS AND DISBURSEMENTS.

Dues from County Societies and Subscription to JOURNAL	$ 5044 00	
Income of JOURNAL (exclusive of investments, etc.)	5284 92	$10228 92
Interest on Investments, viz:		
Interest on Liberty Bond No. 1.	85 00	
Interest on Liberty Bond No. 2.	42 50	127 50
Total receipts		$10356 42

DISBURSEMENTS

STATE MEDICAL ASSOCIATION:		
Secretary's Salary	$ 1500 00	
Secretary's Stenographer	900 00	
Secretary's stamps and envelopes	491 52	
Secretary's printing	12 00	
Treasurer's office expense and Bond	66 04	
Officers, Councilor and Committee expense	400 84	
Attorney's Fee Medico-Legal Committee	1583 42	
Cost and Expenses	19 00	
Association Sundries	62 80	
Expense of Louisville meeting, 1918	1231 92	
KENTUCKY MEDICAL JOURNAL:		
Business Manager's Salary	$ 600 00	
Printing JOURNAL	3028 75	
Postage on JOURNAL	130 00	
Cost of Paper	540 95	
JOURNAL Sundries	690 75	
President's Sundries	2 00	
Business Manager's Sundries	10 00	5002 45
		$10969 99
Balance on hand this date		4733 24
Total		$15703 23

EXHIBIT C.

Detailed list of receipts from County Societies fro mSeptember 1, 1918 to September 1, 1919, compared with incomes of same period last year.

	1918	1919
Adair	$ 30 00	$ 00 00
Allen	48 00	45 00
Anderson	24 00	27 00
Ballard	55 50	51 00
Barren	69 00	48 00
Bath	24 25	24 00
Bell	84 00	75 00
Boone	38 00	21 50
Bourbon	67 00	12 00
Boyd	72 00	91 00
Boyle	42 00	36 00
Bracken	16 50	15 00
Breathitt	20 00	21 00
Breckinridge	48 35	57 00
Bullitt	34 50	27 00
Butler	21 00	9 00
Caldwell	36 00	36 00
Calloway	51 00	48 00
Campbell-Kenton	292 00	208 50
Carlisle	42 00	33 00
Carroll	18 00	15 00
Carter	45 00	39 00
Casey	27 00	12 00
Christian	117 00	108 00
Clark	60 00	42 00
Clay	9 50	3 00
Clinton	18 00	15 00
Crittenden	27 00	33 00
Cumberland	18 00	36 00
Daviess	177 00	192 00
Elliott	6 00	0 00
Estill	3 00	12 00
Fayette	168 00	198 00
Fleming	60 00	42 00
Floyd	21 00	6 00
Franklin	62 00	24 00
Fulton	44 00	48 00
Gallatin	15 00	9 00
Garrard	39 00	30 00
Grant	40 50	39 00
Graves	104 00	78 00
Grayson	58 50	15 00
Green	15 00	9 00
Greenup	23 25	18 00
Hancock	6 50	3 00
Hardin	81 00	72 00
Harlan	30 00	72 00
Hart	26 00	18 00
Harrison	66 00	60 00

Henderson	83 50	75 00
Henry	51 00	45 00
Hickman	33 00	21 00
Hopkins	87 00	69 00
Jackson	15 00	12 00
Jefferson	773 70	686 00
Jessamine	30 00	30 00
Johnson	39 00	38 00
Knott	3 00	0 00
Knox	45 00	48 00
Larue	29 50	27 00
Laurel	36 00	27 00
Lawrence	39 00	33 00
Lee	18 00	15 00
Leslie	9 00	12 00
Letcher	23 00	48 00
Lewis	30 00	21 00
Lincoln	48 50	39 00
Livingston	36 00	33 00
Logan	66 00	66 00
Lyon	21 00	20 00
McCracken	109 50	101 00
McCreary	21 00	15 00
McLean	30 50	21 50
Madison	77 50	72 00
Magoffin	18 00	18 00
Marion	48 00	51 00
Marshall	54 00	54 00
Martin	0 00	3 00
Mason	59 00	48 00
Meade	15 00	16 50
Menifee	4 50	3 00
Mercer	61 50	57 00
Metcalfe	36 00	32 00
Monroe	33 00	30 00
Montgomery	42 00	39 00
Morgan	18 00	6 00
Muhlenberg	63 00	51 00
Nelson	51 00	54 00
Nicholas	27 00	39 00
Ohio	36 00	30 00
Oldham	41 50	31 50
Owen	9 00	0 00
Owsley	12 00	15 00
Pendleton	45 00	18 00
Perry	32 00	33 00
Pike	39 00	48 00
Powell	12 00	12 00
Pulaski	39 50	24 00
Robertson	6 00	0 00
Rockcastle	23 50	18 00
Rowan	9 00	6 00
Russell	24 00	24 00
Scott	51 00	48 00
Shelby	54 00	66 00
Simpson	23 50	22 00
Spencer	12 00	0 00
Taylor	33 00	32 00
Todd	39 00	33 00
Trigg	27 50	0 00
Trimble	1 50	21 00
Union	53 50	62 00
Warren	187 50	126 50
Washington	42 00	30 00
Wayne	30 00	24 00
Webster	24 00	13 00
Whitley	60 00	54 00
Wolfe	7 00	3 50
Woodford	30 00	24 00

EXHIBIT D.

Invoice of the property of the Association, September 1, 1919.

Addressograph with 5000 complete addressed plates with list devices, etc	$ 600 00
Folding Machine	140 00
1 Oliver Typewriter	100 00
1 Remington Typewriter	100 00
1 Desk	79 00
Filing Cabinet	64 75
Rubber Stamps	9 00
Typewriter Cabinet	33 00
Guide Cards	7 48
1-3 Adding Machine	106 25
Typewriter Chair	9 00
1 Electric Fan	18 00
1 Desk Chair	32 50
1 Globe Safe with fixtures	130 00
4000 No. 5, 2-cent Stamped Envelopes	85 00
2000 No. 7, 2-cent Stamped Envelopes	45 00
500 No. 9, 2-cent Stamped Envelopes	13 41
Total	$1572 39
Reduction for depreciation in machinery	650 00
	$ 922 39

EXHIBIT E.

Secretary's Monthly Balance Sheet, agreeing with books.

1919	Expenses	Collection	Balance
Sept. 1—The bal on hand Sept. 1, 1918			$5346 81
Sept. 20—To bal. on hand.	$2452 08	$1255 99	4150 72
Oct. 31—To bal on hand.	1576 54	473 88	3048 06
Dec. 2—To bal. on hand.	553 80	530 57	3024 83
Jan. 1—To bal on hand.	351 51	487 92	3161 24
Jan. 31—To bal. on hand.	1028 50	1219 75	3352 49
Feb. 28—To bal. on hand.	639 00	1159 90	3873 39
Mar. 31—To bal on hand.	1081 00	1024 73	3817 12
April 30—To bal. on hand.	627 75	2623 00	5812 37
May 1—To bal. on hand.	845 60	700 33	5667 10
June 30—To bal on hand.	813 70	277 72	5131 12
July 31—To bal. on hand.	708 95	602 63	5024 80
Sept. 1—To bal. on hand.	291 56	00 00	4733 24
	$10969 99	$10356 42	
Bal. on hand Sept 1, 1918		5346 81	
		$15703 23	

Balance on hand September 1, 1919	$ 4733 24
Total Expenses	10969 99
Total	$15703 23

EXHIBIT F.

Collections by Secretary on account of Kentucky State Medical Association, corresponding with checks, deposit slips, and receipts, filed herewith:

1918-1919

September 20—To collections to date	$ 302 00
October 1—To collections to date	34 00
December 1—To collections to date	6 00
January 1—To collections to date	84 00
January 16—To collections to date	289 00
February 1—To collections to date	396 00
February 12—To collections to date	326 00
February 28—To collections to date	394 00
March 18—To collections to date	312 00
March 31—To collections to date	206 00
April 10—To collections to date	1831 50
April 30—To collections to date	385 00
May 15—To collections to date	206 50
May 31—To collections to date	120 00
June 30—To collections to date	74 00
July 31—To collections to date	78 00
Total for year	$5044 00

EXHIBIT G.

Collections by Editor on account of the JOURNAL, corresponding with checks, deposit slips, and receipts filed herewith:

1918-1919

September 20—To collections to date	$ 953 99
October 31—To collections to date	439 88
December 1—To collections to date	524 57
January 1—To collections to date	405 92
January 16—To collections to date	366 12
February 1—To collections to date	168 63
February 12—To collections to date	83 24
February 28—To collections to date	356 66
March 18—To collections to date	193 33
March 31—To collections to date	313 40
April 10—To collections to date	59 24
April 30—To collections to date	347 26
May 15—To collections to date	50 75
May 31—To collections to date	323 08
June 30—To collections to date	203 72
July 31—To collections to date	524 63
Total for year	$5312 42

EXHIBIT H.

Total membership by Councilor Districts and by Counties for 1919 as compared to that of 1918.

First District.

County	1918	1919
Ballard	18	17
Caldwell	12	12
Calloway	16	16
Carlisle	14	11
Fulton	13	16
Graves	35	26
Hickman	11	7
Livingston	11	11
Lyon	7	7
Marshall	18	18
McCracken	36	35
Trigg	9	0
Total	200	176

Second District.

Breckinridge	15	19
Crittenden	9	11
Davis	57	64
Hancock	2	1
Henderson	26	25
Hopkins	29	23
McLean	10	7
Muhlenberg	19	17
Ohio	11	10
Union	16	21
Webster	6	4
Total	200	202

Third District.

Allen	15	15
Barren	23	16
Butler	6	3
Christian	39	36
Cumberland	6	12
Logan	22	22
Metcalfe	12	11
Monroe	11	10
Simpson	7	7
Todd	13	11
Warren-Edmonson	63	42
Total	217	185

Fourth District.

Bullitt	10	9
Grayson	19	5
Hardin	25	23
Hart	8	6
Henry	17	15
Larue	10	9
Meade	5	5
Nelson	17	18
Oldham	10	10
Shelby	14	22
Total	135	122

Fifth District.

Anderson	8	9
Boone	9	7
Carroll	5	5
Franklin	21	8
Gallatin	5	3
Jefferson	266	241
Owen	3	0
Spencer	4	0
Trimble	1	7
Total	322	280

Sixth District.

Adair	10	0
Boyle	14	12
Green	5	6
Marion	16	17
Mercer	20	19
Taylor	11	11
Washington	14	10
Total	90	75

Seventh District.

Casey	9	4
Clinton	6	5
Garrard	13	10
Lincoln	16	13
McCreary	7	5
Pulaski	11	8
Rockcastle	7	6
Russell	8	8
Wayne	10	8
Total	87	67

Eighth District.

Bourbon	20	4
Bracken	5	5
Campbell-Kenton	85	85
Fleming	19	14
Grant	13	13
Harrison	22	21
Jessamine	10	10
Mason	18	16
Nicholas	9	13
Pendleton	15	6
Robertson	2	0
Scott	17	16
Woodford	9	8
Total	244	211

Ninth District.

Boyd	24	31
Carter	15	13
Elliott	2	0
Greenup	7	6
Johnson	13	14
Lawrence	13	11
Lewis	10	7
Magoffin	6	6
Pike	13	17
Total	103	105

Tenth District.

Bath	8	8
Breathitt	7	7
Clark	20	14
Estill	1	4
Fayette	56	66
Knott	1	0
Lee	5	5
Letcher	8	16
Madison	22	25
Menifee	1	1
Montgomery	14	13
Morgan	6	2
Owsley	4	5
Perry	10	11
Powell	4	5
Rowan	3	2
Wolfe	2	1
Total	172	185

Eleventh District.

Bell	22	25
Clay	3	1
Harlan	9	24
Jackson	5	4
Knox	15	16
Laurel	12	9
Leslie	3	4
Whitley	21	17
Total	9	100

Cancer of the Esophagus.—The woman of 52 had been having rebellious recurring eczema for thirty years when erythrodermia developed, with desquamation, the nails dropping off and the hair falling, with pruritus, emaciation and cachexia, and finally a spontaneous fracture of the tibia and a transient slight difficulty in swallowing. Roentgenoscopy then revealed a cancer in the esophagus, soon confirmed by necropsy, which disclosed multiple metastases in the brain, skeleton and liver. The erythrodermia was probably an early manifestation of the malignant disease.

ORIGINAL ARTICLES

A CASE OF EMPYEMA TREATED BY INJECTION OF BISMUTH PASTE.*

By H. R. Nesz, Cecilia.

Mr. T. M. P., age 60 years, farmer all his life. Married. No children. Wife living and in good health. Family history excellent. Both parents lived to be very old. All brothers and sisters are living and in good health. Since having the diseases of childhood this man has had no illness or injury up to his present trouble.

During the fall of 1917 he developed a right lobar pneumonia which was followed by an empyema of the same side. He was attended by his family physician who with the assistance of a neighbor doctor opened the right pleural cavity between the fifth and sixth ribs in the mid-axillary line, some four weeks after the development of the pneumonia. Quite a large quantity of foul-smelling pus was evacuated and gauze strips were used for drainage. These strips were removed and renewed every few days and tonics given per mouth. A profuse discharge continued and he finally, during September, passed out of the hands of his doctor and had no treatment except some cod liver preparations he would buy at the drug stores.

I first saw him on March 3rd, 1918. At this time he had lost sixty pounds, having gone down to 100 pounds from 160 pounds; had no appetite and was very despondent. His temperature was 103 in the afternoon, pulse 120, respiration 28 with profuse sweats. Upon examination all organs were found to be apparently normal except the right chest. In mid- axillary line between fifth and sixth ribs was found a sinus about the size of a lead pencil leading upward and inward into the pleural cavity from which about three ounces of very foul pus was being discharged every twenty-four hours. Examination of this pus showed no tubercle bacilli present, those present were coli-communis, streptococceeie pyogenes, staphylococcic pyogenes, albus and aurens.

As this man's condition seemed hopeless I did not promise him a thing. An operation was out of the question on account of his extreme weakened condition, so I explained to him that by the injection of a vaccine and the filling up of the cavity in his side with some medicine I might do him some good. At first he balked. I think more on account of the fee I was to charge than otherwise. He finally decided to give the treatment a trial. On the following day I gave him 1 c.c. Van Cott's mixed infection vaccine, enlarged the sinus under local anesthesia, novocaine one half of one per cent and with an ordinary hard rubber male syringe with a long tip, I filled the cavity with the following mixture: Bismuth-subcarb 1 part, iodioform 2 parts, and liquid petroleum, 4 parts. It required four ounces to fill the cavity. Strychnine sulphate, 1-40 grain was given by mouth every four hours. A loose dressing of gauze was strapped in position and the mixture and pus allowed to drain as it would. This procedure was repeated every seventh day until April 9th, when I discharged his as cured. He gained weight rapidly and attended a good size tobacco crop that season. His temperature and sweats stopped after the third treatment and improvement was rapid. During December, 1918, this man became ill again and was attended by a physician for bronchitis. All known remedies for this condition were tried with no benefit. Upon my return from the Army in February, this year I was called to see him, his physician having been dismissed some time previous. His side at the old scar opened and began discharging pus the day before I saw him and his cough was much better.

He had lost considerable weight but was not nearly so weakened as the year previous and I found him propped up in a chair. The same treatment was given as before and he was discharged March 4th, as cured. He is now in apparently normal health, no cough, good expansion with weight up to normal and is attending a good sized crop. This is the only case of this type that I have so treated. Should he have any further trouble I will report. During my limited experience I have operated some six of this type of cases and in all have removed good sized sections of one or more ribs with comparatively early recovery in all six cases, so I am convinced that the secret of success is a large opening as near bottom of cavity as possible so as to insure free drainage.

Read before the Hardin County Medical Society.

Differentiation of Organic Radial Paralysis.—Boisseau's illustrations show a characteristic inability to spread the fingers apart on a plane surface when there is organic radial paralysis. The first phalanx of the fingers curves and the thumb twists in abduction. With hysteric radial paralysis, either the patient is unable to make any spreading movement or it duplicates the action of the sound side.

THE URGENT NEED OF BETTER HEALTH WORK.*

By J. F. Dunn, Arlington.

The all-time health officer question being again agitated is my apology for consuming your valuable time with this paper, the object of which is not to lay down a set of rules or plans whereby this great thing can be pulled over, but to present a few facts which may, in connection with the discussion that might follow, cause us to stop and consider the seriousness and vast importance of this great question.

We are living in a swift age. All occupations and professions are advancing with rapid strides. The lawyer cannot be admitted to the bar as easily as he could in years gone by. The school teacher who, only a short time ago could teach the coming generation of America on a third class certificate, is a thing of the past as he should be, and now the requirements of a teacher are ideal in every respect. The farmer is waking up. We find him well equipped with all modern conveniences, such as riding plows, discs, tractors, etc., to aid him in his line of work. Not only do we find the lawyer, the teacher and the farmer well equipped to practice their profession, but we find them getting marvelous results. For instance we see the teacher of today teaching sanitation and hygiene, mother tongue, agriculture, emergencies, etc., which were unheard of 10 years ago in the school room, and she is getting it put into practice. Not only do we find the farmer equipped as mentioned above, but we find that in the most of the counties they have the all time health officer, or in the language of the farmer, the county agent, the duties of whom will be explained later. He, too, is getting wonderful results. So it is with all other lines and professions.

Now how about the medical profession. I am proud to say that the requirements are ideal. We find the average physician of today well equipped in the branch of medicine which he proposes to represent. The requirements are getting more rigid year after year and we certainly would be willing to entrust our sick child to the care of the young doctor who graduates to-day. The requirements are so high now that the following results are observed: In the class from which I graduated in 1905, in just one of the six schools in Louisville there were about 200 graduates. I understand that in the combined schools of Louisville there will be in the graduating class this year four. I prophesy there will be a doctor famine in the near future. But let that be as it may.

It being the case that we are as a profession prepared for any emergency that might arise, are we getting the results that we should? We have done and are doing some wonderful things in the way of preventing and curing disease. We are vaccinating against smallpox and typhoid, we are rigidly quarantining all contagious diseases, we are preventing the flies and mosquitoes from getting in their deadly work, and we are actually curing tuberculosis and doing many other things needless to mention as all are aware of them. But while this work of prevention is getting some good results it is my honest opinion that we are not going back far enough. The place to get results, lasting results, is in the school room. The future destiny of our nation depends upon the school boy and girl of to-day. Shall we fall short of our duty and be the cause of some of these boys and girls to be as seed sown among the thistles and thorns?

Our country is in constant need of men, stalwart men of brains and talent who can preserve the dignity of our nation until the end of time.

Those of us who have had the task of examining the drafted boys for the army could plainly see the fruits of negligence along health lines. Our instructions were to give the government the benefit of the doubt. They would rather that we sent a dozen men to camp who were physically unfit than to exempt one man who was fit for service. If the government values a good man so highly, then does it not become our urgent duty as a profession to see that every boy and girl in our land develops into perfect manhood and womanhood wherever it is possible? In one instance while I was on the examining board we had seventeen boys to examine one morning and out of that seventeen we found nine of them physically unfit. Of course this was somewhat out of proportion but the percentage was entirely too high all the time. Many of these infirmities were due to physical neglects during childhood. Of course we can but let the dead past bury the dead, but we should do our utmost in the future to see that no boy or girl fails to develop what is in them on account of our neglect.

The school children of our country are badly neglected. It is there that tuberculosis, trachoma, and many other infectious and contagious diseases are spread, also eye strains and spinal curvatures, and then come the adenoids and bad tonsils which cause faulty development both mentally and physically and also invite disease. These ravages are

*Read before the Southwestern Kentucky Medical Society.

going on from day to day in many of our schools especially in the rural districts and no attempt whatever is being made to overcome them. There are a great many children that never heard a talk on sanitation or hygiene, and also a great many adults. At a recent meeting of our Parent Teachers Association, at Arlington, I was put on program for a talk on the Modern Sanitary School. I gave my ideas of such a school and at the same time pointed out wherein our school was falling short. This was the first talk that was ever made in our school building on any subject pertaining to health. The result was that three prominent citizens became insulted, one of them being a trustee of the school, who said our school was as good as any of the rest and that the people should not know of these things as they might not want to send their children to school. My answer was that every parent should know the exact hygienic surroundings of his child and that the medical profession was working for higher ideals than he had in his mind and that those ideals could never be attained unless the people are taught the need of them. That is a fair sample of why we are not making more progress than we are. It seems that the people are not awake to the good that could be accomplished if they would only give us a chance.

Just here I want to relate briefly the situation in my county, Carlisle. I am ashamed of the state of affairs but nevertheless such a condition exists. We have had a brilliant farm agent in Carlisle county for the past three years and he has accomplished much. He has shown the farmer how to farm in a modern way so that he could make more money and with less energy. We see loads of limestone carried to various farms to meet the chemical deficiency thereof. And we see great herds of fine cattle and many other things that have been instituted at his suggestion. We have also seen him teaching the farmer lessons on diet and hygiene of the stock, also vaccinating against cholera and doing various things to preserve the lives and health of the dumb brutes of Carlisle county. He receives a salary of $1,600 per year. On the other hand, we have a health officer whose duty, the most noble one on the face of the earth, is to preserve the precious lives and health of the babies and school children of our country. He receives a salary of $150 a year, and that is paid with reluctance. The fiscal court seems to take it as a joke when we ask for an appropriation of any kind for the benefit of the public health. The farm agent is a fine thing to have, but if we can't have both why not do away with him and spend the $1,600 for the benefit of health. That simply shows how the public look at it, and also where our great obstacles are. This is not only true of my county, but many other counties are in the same boat. Some one might say that if the people don't want these things just let them suffer. That is a mistake, as ignorance is inexcusable and the children are the ones that have to suffer and it is not right for the innocent children to suffer for the sins of their forefathers.

Modern civilization demands universal education, but this will rapidly become universal deterioration unless the waste of the health of the future fathers and mothers of the race due to bad air, bad lighting, bad seating, overcrowding and the mingling of the sick with the well are prevented.

In childhood many conditions may be remedied or prevented that in adult life may gravely compromise the health or usefulness of the individual.

Is the compulsory educational law right? Our answer is in the affirmative. Then if it is right to compel every child between the ages of 5 and 14 to attend school so many months out of each year, then I say it should be nothing short of criminal on the part of some one if that child fails to receive that care and protection that he so justly deserves.

The medical profession has striven hard for several years to overcome this negligence, but each time we meet with obstacles and the progress that we have made is slow and insidious. We have made several attempts through the legislature which were practically unsuccessful and it seems that we are to be pitied rather than blamed.

The fault, as I see it, is due to a lack of understanding by the public as to the good that could be derived from the procedures that we have been advocating. A great many people believe that we are expecting to get some pie out of this in the long run, but some day in the future they will realize how badly they were mistaken and will also realize that we are the only men on earth that work against our own financial interests.

I am not knocking against my home county for I am sure it is as good as the average. I shall venture to say that if we were to-day to take a vote for raising a tax of even 5 cents on the $100.00 for the benefit of the public health it would be defeated by an overwhelming majority.

In conclusion let me say that I have only one suggestion to make, and it is merely a passing suggestion, and that is, to put on a campaign in the various counties throughout the State having intelligent speakers from the medical profession in conjunction with the physicians of each precinct in whom the

people have the utmost confidence, telling the people of the urgent need of better health work and the results obtained therefrom. We fear that this great work cannot be done without the co-operation of the public as it will take money and the money must come out of the public.

Having awakened an interest among the people and having obtained their cooperation it would be an easy task for every county in Kentucky to have the all-time health officer, or the nurse, or both, the results of which in the not far off future would be beyond imagination.

ECLAMPSIA; AN HYPOTHESIS.

By Leon K. Baldauf, Louisville.

PRELIMINARY COMMUNICATIONS

Notwithstanding the interest that has attached to the subject of eclampsia since the earliest times, no satisfactory explanation of even a part of the phenomena has as yet been advanced. According to Williams[1] eclampsia is an acute disease which may occur in the pregnant parturient or puerperal woman and is characterized by clonic and tonic convulsions, followed by more or less prolonged coma. It is generally stated that 70-80 per cent of all cases occur in primaparous women and that twin pregnancy and hydramnios appear to act as predisposing factors. According to Olshausen and Cassamayor cited by Williams, twin pregnancy has been noted in 8 and 5.7 per cent of their cases respectively, whereas for all labor the usual ratio is 1 1-2 per cent. It is also stated by Williams that if the eclampsia comes on during pregnancy the prognosis is very favorably affected by the death of the foetus, the convulsions usually ceasing soon afterward.

THE ROLE OF CALCIUM IN METABOLISM.

The relationship between muscular tonus and calcium metabolism has been abundantly studied. Especially noteworthy in this connection is the altered calcium metabolism followed by extirpation of the parathyroid glands, resulting in tetanic convulsions. The relief of these convulsions has followed administration of calcium salts.

In a personal communication to Sellards[2], Peabody mentions two cases of typical uremia where definite though temporary cessation of muscular twitchings occurred after intravenous injections of calcium chloride.

Loeb[3], cited by Sellards has shown that the precipitation of calcium salts gives rise to muscular tremors and twitchings.

Howland and Marriott[4] by a striking series of analytic determinations have furnished incontrovertible evidence of a diminution of the calcium in the serum in cases of active tetany. The quantity of this element in the serum of normal infants as well as in placental serum is singularly constant above 10 mg. and rarely more than 11 mg. per 100 c.c. serum. In 18 cases of idiopathic tetany on the other hand it averaged 5.6 mg., being greatly reduced in all cases. The logical sequence of a discovery of a lowered calcium content in the blood was to attempt to increase the amount of this alkali earth element. The administration of calcium chloride with the food has proved efficacious, thus substantiating the hopes of the investigators. They assert that severe or dangerous symptoms must sometimes be held in check by sedatives until calcium in full doses produces its effects. Thereafter only calcium need be given.

These facts suggest that in the super-normal demands made upon the maternal circulation during the latter months of pregnancy, an etiologic factor might be found. We refer especially to the calcium for it has been recently shown that during the last three months of pregnancy an enormous deposition of lime salts in the foetus occurs, and in addition a considerable amount of calcium is consumed in the production of milk. There are other extra demands for the calcium salts.

Regarding the metabolism of calcium in normal pregnancy very little is known, but the very recent works of Lambers[6], would indicate that in the normal pregnancy the calcium content of the blood remains at a remarkably constant level, slightly higher than in the non-pregnant woman. In labor, however, the average calcium content rises slightly.

The calcium metabolism in eclampsia, as far as we have been able to determine, is as yet uninvestigated.

The analogy, nevertheless, is strong enough to suggest the possibility of a cause or relationship between the clinical signs of eclampsia and a defective mobilization of the calcium of the body. We therefore venture to suggest the hypothesis that the convulsions of eclampsia are precipitated by the more or less sudden depletion of the calcium reserve of the mother or by the inability of the maternal organism to mobilize the calcium at its disposal; the net results being deficient supply of calcium to the tissues. That the differentiation, tetany of pregnancy, chorea of pregnancy and eclampsia is clinical and represents grades of this calcium depletion or defective mobilization. This hypothesis, we purpose to

investigate by a study of the calcium metabolism in eclampsia.

In presenting this hypothesis, we have intentionally omitted the question of acidosis although admitting the possibility of its importance. This omission, however, does not influence the prime importance of the calcium metabolism, even though the acidosis may be present in marked degree.

"In a series of recent articles by Van Slyke[6] and his associates it has been shown that the best criterion for acidosis is the concentration of bicarbonates in the blood plasma. In acidotic conditions the bicarbonate concentration of the plasma is uniformly depressed, feeding acid therefore would tend to depress the bicarbonate concentration in the plasma and that an inverse relation between the calcium and bicarbonate content of the plasma is highly probable is shown by the work of Rona and Takahashi[7]."

These authors studies various mixtures of calcium and bicarbonate by physicochemical methods and found that the relation between the hydrogen ion concentration and the calcium and bicarbonate contents of such mixtures was expressed by the equation, Ca'' HCO'—H' equals a constant. The equation means, of course, that if the hydrogen ion concentration remains constant the amount of calcium held in solution will vary inversely with the bicarbonate.

The physiological results which are at present at hand accord very satisfactorily with the view that the calcium and bicarbonate concentration or plasma tend to vary inversely.

Whatever acidosis may be present therefore, will increase the demand for calcium and as already a calcium depletion or a defective calcium mobilization exists the additional acidosis will necessarily intensify the condition.

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SUMMER DIARRHEAS OF CHILDREN.*

By W. J. Shacklett, Glendale.

A few years since the mere mention of "summer diarrheas of children" caused the doctor to pause and scratch his head and brought memories of horror and often sadness to the hearts of mothers.

How often in soliciting the family history in life insurance examinations we have to record the death of one to three children, "died of summer complaint." Already we see a lessening of this frightful record in younger families.

It is our purpose and aim in this meeting to-day to further suggest new plans or measures or to impress those already instituted for the prevention and saving of the children from the ravages of this once terrible scourge.

Many of us can remember not many years since how frequent our little patients drifted into that long drawn out condition of suffering and emaciation that only ended with the cooler days of autumn or less happily in death.

Sanitary and dietary discoveries and developments by the medical profession and their persistent teaching has wrought wonders in the prevention and mitigation of these diseases. Our main study and efforts now are not so much for means of cure but of prevention. And while this has greatly lesseued our source of income it has brought health and strength to thousands of children, happiness and gain to parents, the joys of accomplishments and the sweet approval of conscience to the profession.

These measures of prevention are familiar to you all but that they may be bright in our minds at this dangerous season of the year, I will briefly make mention of some of the most important.

It is human to shun danger when it is known, and as we enlighten the public of the dangers of infection and where and under what conditions they are most likely to be encountered naturally they will be more on the alert and teach their children to avoid them.

One of the greatest dangers at this season of the year lies in a faulty diet. The danger is not so much in what children eat as in the quantity and character of the food. It is true that with the advent of hot weather fruit and vegetables, digestive disturbances are much more prevalent. But where fruit and vegetables are fresh, properly cooked and preserved they do not often cause any disturbance.

Hot weather may to some extent lower the

*Read before the Hardin County Medical Society.

resistance of the system but the chief dangers come from the food stuffs being acted upon by the heat of summer causing them to ferment or putrefy and being ingested into the alimentary tract in this condition they are liable to produce irritation and infection with the resultant digestive ills.

To prevent these ills then we should impress parents to see to it that all food stuffs intended for eating should be fresh, well cooked and pure. Foods kept over from one meal to another should be kept cool enough to prevent fermentative or putrefactive changes. Money spent to secure ice for this purpose is a splendid investment. Milk may be chemically affected by something the cow may eat on pasture that may cause some gastric or enteric irritation but by far the greater danger comes from the changes in the milk caused by the continuous action of heat.

Fresh, pure milk should be one of the principle articles of diet for children. I have known whole families and one or more children in scores of families who did not drink milk in any form though they had an abundance of it. Their excuse was that they did not like the taste of it or that it did not agree with them. We should try to convince them that their notion is not well founded. That most every one can acquire a taste for it and that when it is fresh and pure it should seldom disagree with any one.

The purity of the water used for drinking should be investigated and where contamination is suspected it should be boiled or discarded for other of known purty. Sanitary and hygienic conditions peculiar to each case should be looked into and corrected as far as possible. That the institution of the above mentioned preventive measures will greatly lessen the number of cases of summer diarrhea among children has been impressed upon me from my observations of conditions in the Kentucky Baptist Children's Home. Where with more than a hundred children for the past four years we have had less than a dozen cases of this disease and no deaths. There no food stuffs are left over from one meal to another to become tainted, the children are not allowed to eat between meals or with dirty hands and faces. Their habits are regular and they have plenty of pure water for drinking and bathing.

But after all our talking and writing and our ever insisting on the observance of proper preventive measures we will still be called upon to treat "summer diarrheas of children." And then having an object lesson before us, comes our greatest opportunities to impress the principles of prevention and the value of their observance. Besides much of this observance will hold good in the case in hand. All food, at the onset, and especially if it be severe, should be withheld for at least twenty-four hours. Albumen, barley or rice water may be given at the discretion of the attending physician. Pure, fresh milk should be given as soon as it will be well borne, and may be diluted with lime or soda water. Fresh butter milk or milk treated with the Bugarion bacillus is one of the most valuable as well as safest foods we have at our command. We should ever keep in mind and impress the mother or nurse with the fact that upon the character of the food and its judicious administration and other hygienic measures, depends the recovery of the child more than upon medication. Many cases in which the above measures are properly complied with will recover without drugs. But if the onset be severe or the case is advanced before the doctor is called, drugs have their place and if wisely administered are of invaluable aid.

At the very first sign of diarrhea, and most mothers have learned this useful lesson, castor oil should be administered and repeated as indicated throughout the attack. Where gastric symptoms are prominent it will often be best to give calomel in place of castor oil. Here some laxative saline draught may be helpful. As the "First thought" and the measure of prime importance is to clean out the intestinal tract and rid it of all offending matter, for this purpose give the drug of your choice and wash out the lower bowels. For the latter purpose a long tube or catheter is sometimes used with the idea of throwing the fluid into the upper bowels but with the child's hips elevated it seems that as good results may be had with the short rectal tip and avoid the danger of irritation with the long tube. Washing out the stomach may sometimes be advisable but in most instances nature has taken care of this by producing vomiting.

During the first twenty four hours atropine will often serve a good purpose. We should carefully guard against giving drugs without a definite purpose and indication. I have come to doubt the efficacy of antiseptic or astringent drugs per orum in the acute stage.

Bismuth in some of its forms is of value in cases of considerable irritation. Cases characterized by an acidosis will be benefited with an alkaline treatment. For this the old fashioned neutral cordial is hard to beat.

If the little patient is so unfortunate as to drift into the sub-acute stage then supportive measures should be our chief reliance. Proper nourishment in the limits of digestive ability, should be pushed. Here sufficient

clothing and fresh air counts more than ever. Often I have seen these little emaciated forms take on improvement after placing them on a cot under the shade of a tree through the day. Strychnine or other stimulants may and often are needed. I do not think whiskey or brandy should ever be given. Tea or coffee is permissible and are sometimes of value.

Cod liver oil often proves very beneficial in the reconstructive stage.

There are scores of other drugs that are used and advised in these cases and some times are helpful but I will make mention of only one other that I neglected to mention before. Given properly it is one of the greatest boons to suffering humanity. Under its soothing influence there is sweet respite from nervousness and pain, the body relaxes and nature is given an opportunity to repair. The physician should decide when it is best to withhold it but where conditions will permit to be merciful and relieve the little sufferer with an opiate.

INFLUENZA.*

By M. M. Robinson and Alson Baker, Berea.

The historical facts regarding influenza can be very briefly and fairly set forth by quoting the following paragraph from Osler, "Great pandemics have been recognized since the Sixteenth century. There were four with their succeeding epidemics during the last century, 1830-33, 1836-37, 1847-48 and 1889-90. The last pandemic seems to have begun as many others have before, in the far East. It may have started May 1889 in Bokhara, reaching Moscow in September, the Caucasus and St. Petersburg in October. By the middle of November Berlin was attacked. By the middle of December it was in London and by the end of the month it had invaded New York and was widely distributed over the entire continent. Within a year it had visited nearly all parts of the earth." These facts are corroborated by Tyson and Anders.

In former epidemics, age has not been an important factor, but Anders gives 20 to 30 years as the most susceptible period. In the present epidemic we have found cases at all ages from early infancy to late middle life. The very great majority of cases occurred in the period from 15 to 30, a very few in people over 50. Less than a dozen cases were seen in people who had been attacked in the epidemic of 1889-90. In our 1500 cases we have seen scores of instances in large households where all the younger members were affected and all those past middle age escaped. In fact this was the rule and the exceptions were negligible.

In America the epidemic of 1889-90 was a cold weather disease followed by small local outbreaks in the next cold season. The present epidemic in the United States began in the early days of September 1918 and in our community attained its greatest intensity both as regards numbers affected and mortality in October. During the quarantine and closing of places of assembly, there was a great decline followed five days after the lifting of the quarantine by another outbreak almost equaling the first in intensity and mortality. The quarantine was again instituted and followed immediately by vastly improved conditions. Following the lifting of the second quarantine another wave of the epidemic swept the community in January. The cases in January were as severe at onset as those in October but the course of the disease considering complications, was shortened on an average of three to five days. The mortality was not more than half as great.

Since 1892 until recently the bacillus of Pfeiffer has been universally accepted as the cause of influenza. The bacillus is very small, being .2 to .3 micron in diameter and .5 to 1 micron in length. In fact, the bacillus is not easily seen at a magnification of 1000 diameters. We have found an organism corresponding to it in apparently pure culture in only one instance, a case of acute cystitis complicating a case of influenza with pneumonia. The urine was extremely acid and was loaded with the organisms. In all other instances we have found this bacillus associated with other bacteria, but often preponderating immediately over all its associates.

Some pathologists and bacteriologists are now in doubt as to the role that the bacillus of Pfeiffer plays in the etiology of the disease. All are agreed on these points however: in influenza the clinical manifestations are fairly constant and there is always a leucopenia in the presence of infection, by the bacillus of Pfeiffer unless there is a heavily preponderating secondary infection by some other organism.

MacCallum, "Text Book of Pathology," last edition, February, 1918, gives bacillus of Pfeiffer as the cause of the disease. He states that in the epidemic of 1889-90 the bacillus of Pfeiffer was found in practically pure culture in many cases. Delafield and Prudden, "Text Book of Pathology," edition of 1911 makes this statement, 'Early in 1892 Pfeiffer, Kitasato and Canon described the occurrence in the bronchial exudate and in the blood of influenza patients of a very small bacillus hither-

*Read before the Madison County Medical Society.

to unknown or possibly noted earlier by Babes. This bacillus, bacillus influenzae, was sometimes present in the bronchial exudate in enormous numbers, and often with little or no contamination with other germs. It was found at the seat of other local lesions and the pus cells often contained many baeilli. It has been found to persist in the body long after the active processes have ceased." Here is another statement by the same author which explains a peculiar chest sound which we have found to be characteristic of influenza, viz.: an old sibulant rale: "The lesion of the lungs is usually of the broncho pneumonia type and is apt to involve the interstitial tissue."

In this epidemic in every instance where we have looked for it in the sputum we have found an organism answering the description of the bacillus of Pfeiffer in size, shape, general appearance and tendency to bi-polar staining with both methylene blue and dilute fuchsin.

The following description fits the average case as we have seen it: When the patient comes to the hospital the temperature is usually 101 to 103 1-2. There is great prostration. The pulse is not quite as rapid as is usual in other febrile reactions of like severity. There is great muscular pain with headache and pain in and behind the eyeballs. The tongue has a pearly white coat. There is more or less cough. In about 25 per cent of cases there is hemorrhage from some of the mucous membranes, most commonly from that of the nose, though we have seen severe hemorrhages from the intestines and from the lungs. There is always a leucopenia and a bacillus corresponding in every way to the bacillus of Pfeiffer is always found associated with a greater or less number of other bacteria in the sputum. We have not seen this bacillus in any other condition.

The febrile reaction, if there are no complications, lasts about five days, disappearing by lysis.

The complication most feared and most important is pneumonia. This complication occurs in four distinct types, lobar, lobular, broncho and streptococcic.

Lobar pneumonia complicating influenza shows no physical signs that are not observed in ordinary primary lobar pneumonia, but the prognosis is much worse.

Lobular pneumonia is the most common type and the prognosis does not differ materially from that in lobar.

The broncho-type with later great interstitial involvement is more common in children and is a very dangerous complication.

The streptococcic type (presumably the streptococcus hemolyticus, though we have not attempted to cultivate the streptococcus from the blood stream) is the type that is probably always fatal. The patient drown on his own pulmonary secretions.

Other serious chest complications are the pleurisies accompanying or following lobar pneumonia, or occurring independently of pneumonia.

These pleuritic involvements have been characterized by an unusual amount of terrific pain followed very soon after onset, if at all, by serous effusions or by empyema. Pleurisy complicates or follows lobar pneumonia, with influenza in about the same percentage of cases as in primary lobar pneumonia. We have not seen pleurisy with effusion or empyema complicating or following any other type of pneumonia. But a circumstance that has struck us very forcibly is the large number of cases of pleurisy without effusion or empyema that has accompanied all types of pneumonia complicating influenza. In each instance these conditions were carefully differentiated from possible intercostal neuralgias.

We have seen one case of pericarditis complicating influenza and remaining for a time as a sequela. This case occurred in a rheumatic woman of 35, who had very large hypertrophied tonsils.

The intestinal and pelvic complications and sequelae were those due to a lessened resistance. The most prominent were the unusual number of cases of fulminating appendicitis and cholecystitis of a very severe type.

One patient, a male with gastric ulcer, was operated and a posterior gastro-enterostomy done. He did well until the fifth day when he developed influenza as evidenced by the clinical symptoms and the finding of the characteristic bacillus in almost pure culture in the abundant sputum. The symptoms, however, had disappeared by end of the fifth or sixth day and the incision had healed. On the tenth day from the onset of the symptoms of influenza the patient developed a cough with abdominal pain and fever. The cough was accompanied by expectoration of sputum containing streptococci, pneumococci and the bacillus constantly found in influenza. Streptococci predominated in groups and in numbers, the pneumococci were next in order and the small bacilli last. On examination it was found that fluid was rapidly accumulating in the peritoneal cavity. The white cell count was 26,000. The abdomen was opened and about three quarts of pale green fluid was evacuated. This fluid on microscopical examination appeared to be a pure culture of streptococci.

This collection of fluid was walled off from

the site of operation of 15 days before and was clearly a blood stream infection.

The patient lived twelve hours after operation.

Among those who are convalescent or have recently recovered from influenza we have found very many cases of acute otitis media and infections of the accessory sinuses. Cystitis is an occasional complication and a frequent sequela.

In pregnant women the liability to abortion or premature labor is very great and death from sepsis is very much to be feared owing it would seem, to the patient's lessened resistance to the bacteria that ordinarily would be harmless to her.

We have seen meningitis complicating influenza only twice and in each instance the condition was terminal and no examination of the spinal fluid was made.

The observer is very strongly impressed by the patient's condition after recovery from the actual disease. The loss of muscle strength and of body weight are out of all proportion to the apparent severity of the symptoms. Ability to recuperate is lacking. There is always some degree of anemia but even in the lighter cases that were without complications this anemia is more marked than one would have reason to expect. There is noticed a marked tendency to constipation probably due to lack of muscular tone. A few weeks after recovery a very large percentage of patients have been attacked by a severe type of "common cold" which yields rather slowly to ordinary treatment. These colds as most other sequelae are due mainly to lack of resistance.

Our experience leads us to believe that the epidemic of 1889-90 conferred a high degree of relative immunity upon those who suffered with the disease then, and that the "second" and "third" attacks in certain individuals in the present epidemic were relapses from unhealed foci of infection. In our experience none of the individuals who had a "second or third" attack had completely recovered from the first one. In about one hundred people we used the prophylactic vaccine prepared by E. C. Rosenow, of Rochester, with very gratifying results. We believe that early and liberal use of some such vaccine in epidemics of influenza is very advisable and that many lives would be saved by the *use* that otherwise would be lost from the disease itself or more especially from pneumonia.

We conclude that the bacillus of Pfeiffer is the direct or indirect cause of the syndrome with its pathology that is called "influenza." In the indirect cause the syndrome is brought about in this manner: The primary and possibly the sole ascertainable effect of the bacillus of Pfeiffer is in production of a marked leucopenia. This decrease in the normal number of white blood cells and the great impairment of the body's power to produce them results in the overwhelming multiplication of the bacteria ordinarily found in the mouth and air passages. These bacteria produce the clinical symptoms and often overgrow and crowd out the original invaders. Also complete recovery from one attack confers a high degree of relative immunity which lasts many years against subsequent attacks. Also that quarantine and isolation of cases with closure of schools, churches and other places of assembly is a very valuable measure and will go far toward stamping out an epidemic of influenza.

THE HYGIENE OF THE NOSE AND THROAT.*

By Robert Lockhart, Owensboro.

"I shall communicate your judicious remark, relating to the septic quality of the air transpired by patients in putrid diseases, to my friend Dr. Priestly. I hope that after having discovered the benefit of fresh and cool air applied to the sick, people will begin to suspect that possibly it will do no harm to the well. I have not seen Dr. Cullen's book, but am glad to hear that he speaks of catarrhs or colds by contagion—people often catch cold from one another when shut up together in close rooms, coaches, etc, and when sitting near and conversing so as to breathe in each others transpirations. From these causes, but more from too full living, with too little exercise, proceed in my opinion most of the disorders which for about one hundred and fifty years past the English have called colds." The foregoing is an extract from a letter written by B. Franklin to Benjamin Rush, M. D., and dated London, July 4, 1773.

In this one hundred and forty-three years old communication of the wise philosopher, Franklin, to the eminent physician Rush, the former has mentioned a number of those causes which change the cavities of the nose and throat from normal, protective organs into dangerous, disease producing foci. Any patient who suffers from a chronic rhinitis or pharyngitis, usually gives the following history: He has suffered from repeated head colds, each more violent and prolonged than its predecessor. He sleeps in a room with all the windows shut down. He boasts of the

*Read before the Daviess County Medical Society.

fact that he avoids drafts. He has eaten an abundance of meat all of his life. He has discomfort on reading, even for a few minutes. At times he is partially deaf, has a slight ringing in the ears, and a desire to pull something out of them. On further questioning it is discovered that he suffers from intestinal indigestion and constipation. Often, too, he has a heavy, dull headache located in the temples and behind the eyes, or above them. Decayed teeth and infected tonsils are also frequently discovered.

I had a case recently which will illustrate still further what is the proper care of the nose and throat by depicting the opposite condition. W. T., male, age twelve years, height five feet eleven inches, weight ninety-six pounds, complaint, asthma. Examination of the nose and throat disclosed slightly swollen turbinals, mucosa pale and flabby, a mucopurulent discharge from the nasopharynx, almost normal tonsils, and a granular pharyngitis, that is the follicles of the back wall of the throat were swollen and stood out of the underlying mucosa. The ears were normal, while the eyes showed a small amount of astigmatism, which was corrected with the proper lenses. He also had several upper molar teeth which needed attention. This young boy gave the history of having been unable to attend the country district school over half of the short session. His asthmatic attacks were growing more frequent and more severe. He had taken much medicine with only temporary relief. He suffered from indigestion and constipation and took purgatives two and three times a week for their relief. He was a very heavy meat eater, taking it at every meal. Plenty of hot bread and coffee twice a day added more fuel to the flame. He slept in the same room with his parents with the windows tightly closed.

The patient has been under my care about six weeks and in that time has gained ten pounds in weight and suffered only one light asthmatic attack. This fortunate result has been due largely to the regulation of his diet and his personal hygiene. Coffee, meat, beans, peas, potatoes, and white bread were interdicted. Raw eggs, sweet milk, buttermilk, butter, whole wheat bread, cornbread, rolled oats, rice, cheese, green stuff like cabbage and spinach, and fruit in the form of apples were allowed. In addition two glasses of very hot water were ordered before breakfast, and six or eight glasses of cold water during the day.

His father was advised to buy or make a window tent for the boy to sleep under, but his mother being a sufferer from aerophobia negatived this suggestion, notwithstanding it being explained to her that by covering his forehead, head, ears and back of his neck with a thick cap there would be no chance of his taking cold. This precaution of covering head, neck, and ears should be observed by the majority of open air sleepers. Few people have thick enough skins to prevent a decided chilling of the surface of the face and head in the early morning hours. This experience repeated a few times is more likely to lead to a chronic congestion of the nose and throat than it is to an immunity.

A compromise was agreed on between his mother and myself whereby he slept in a large airy room with no other occupant. Besides this he was instructed to douche the nasal cavities morning and night with a solution of warm salt water, one level teaspoonful of salt to one pint of water previously boiled. He was directed to pour a small portion of this moisture into a saucer, set the latter on a table and leaning over draw up the saline into one nostril while holding the other one closed. This being accomplished, he was to reverse the process, in each instance allowing the saline to run down the floor of the nose into the throat and mouth, in this manner cleansing the nasopharynx and mouths of the Eustachian tubes as well as the nasal fossae. Usually this is all the home treatment necessary for a victim of nasal catarrh. It is a safer method than the spray, or the Birmingham douche, and equally as effective. There is decidedly less danger of the liquid penetrating the Eustachian tubes, and setting up an otitis media.

PATHOLOGICAL BASIS OF NOSE AND THROAT CATARRHS.

The majority of the symptoms enumerated in the case of the patient above described, can be best explained through the deleterious effect of his unhygienic habits upon the autonomic or vegetative, or self-regulating nervous system. This great autonomic nervous system performs its functions independently of the will of the individual. It acts as a balance wheel, or clutch, or gyroscope upon the actions and impulses of the cerebrospinal and the sympathetic nerves. It consists of the vagus or tenth cranial nerve, the motor oculi, or third nerve, the chorda tympani nerve, and in addition sends numerous branches to accompany the several spinal and sympathetic nerves. [For diagram see illustration opposite page 96, of the fourth edition of Stedman's Medical Dictionary. A glance at this diagram will illustrate my meaning and demonstrate how readily a toxic condition of the blood could upset this great regulative mechanism, and give rise to all the abnormal conditions that have been described.]

SITUATION, STRUCTURE, AND FUNCTION OF THE NOSE AND THROAT.

In order to realize to the fullest degree, the very great importance of a healthy nose and throat to the well being of the rest of the human economy, one should have a clear conception of the location, make up, and purposes of these protective organs. The nose is divided into two parts, and anterior movable, or cartilaginous part lined inside and out with skin and termed the vestibule. A number of stiff wiry hairs called vibrissae line the interior of this portion of the nose and serve a useful function in catching infected particles either moist or dry, and preventing them from infecting more useful structures. Just behind the vestibule, we come upon the nose proper. For descriptive purposes this is divided into a roof, a floor, and three meatuses, the superior, middle and inferior. The two nasal fossae are separated by the septum, a cartilaginous and bony framework extending directly backward to within a half inch of the back wall of the throat, or pharynx. The inferior meatus is in the outer wall of the nose between the floor of the nose and the inferior turbinate body. Into this meatus opens the lachrymo-nasal duct for the drainage of the tears. The inferior turbinate body consists of a scroll like, thin convex piece of bone covered with mucous membrane, which extends backward and downward almost to the mouth of the Eustachian tube in the lateral wall of the pharynx. The middle meatus is the space lying between the inferior turbinate below and the middle turbinate above. It contains the most important structure in the nose both from the standpoint of the rhinologist and from that of the welfare of the patient. Just a small fraction of an inch posterior to the beginning of this middle meatus and concealed by the anterior part of the middle turbinate lies the hiatus semilunaris, a large shallow excavation draining from below the antrum, the largest of all air sinuses and from above by way of the infundibulum, the frontal sinus and the anterior ethmoidal cells. It is a very easy matter to block temporarily this space, and thus obstruct the drainage of these large air spaces. The act of sneezing is frequently caused by a plug of mucus, or serum obstructing this natural opening. The middle turbinate lies above the middle meatus and is about half the size of the inferior turbinate. It resembles it in structure and has the same function, namely to moisten and cleanse the air on its way to the lungs and to the middle ear and mastoid spaces. The middle turbinate is a part of the ethmoid bone, the cribiform plate of which helps to form the base of the skull. Over this plate run the optic nerves on their way to the eyes, while through some very small openings in it the branches of the olfactory nerve proceed to their destination in the roof and superior meatuses of the nasal fossae.

The superior meatus of the nose is a very small, short channel lying between the middle turbinate below and the superior turbinate above. Into it open the posterior ethmoidal cells and the duct from the sphenoid sinus, located in the body of the sphenoid bone. The superior turbinate has the same structure as the inferior and middle turbinates and is often absent.

The throat or pharynx is divided into two parts, the naso-pharynx lying directly behind the nasal fossae and the posterior ends of the turbinate bones, and the oro-pharynx which lies posterior to the mouth and the base of the tongue. The naso-pharynx lies just below the base of the skull, while the cervical vertebrae form its posterior wall. On the lateral walls are found the openings, or mouths of the Eustachian tubes, and back of the latter Rosenmuller's fossae, shallow concavities filled with lymphoid tissue. The swelling of this tissue together with the involvement of the third tonsils, or adenoids occupying the lateral and posterior walls of the naso-pharynx, are very prominent factors in the causation of chronic post-nasal catarrh, hay fever, chronic catarrhs, of the Eustachian tubes and middle ears, leading to high degrees of deafness, chronic tonsillitis, and through the blood and lymph streams to the arthritides, or joint inflammation of the lining membrane of the heart cavities.

The oro-pharynx lies back of the mouth and the base of the tongue. Just at the base of the tongue is the lingual tonsil, congestion of which is often mistaken for a foreign body in the fauces. Inflammation of the lymphoid tissue of which this tonsil is composed cause an almost unbearable tickling and a constant, hacking irritable cough. On either side of the lingual tonsil are to be discovered the pyriform fossae in which foreign bodies often lodge.

In the lateral walls of the throat lie the faucial tonsils, those lymphoid bodies which have suffered so many forms of surgical attack. The consensus of opinion among laryngologists is that up to the fifth or sixth year, the tonsils serve some useful purpose in the growth and metabolism of the body. Of one thing I am sure and that is that they are more sinned against than sinning. They have to bear the brunt of all the infections which overtakes the teeth and gums, and the nose and nasopharynx. So it requires only a few years for the myriads of microbes manufactured in the adjacent cavities to make of the

tonsils foci of the most dangerous nature. The faucial tonsil lies on the middle constrictor muscle of the pharynx, while in front of it is the anterior pillar, containing the palato-glossus muscle and behind it the posterior pillar, holding the palato-pharyngeous muscle. These pillars through their muscles are connected with the soft palate, which in its turn through muscular and nervous connections, is intimately associated with the Eustachian tubes. So in acts of swallowing the tonsils are pushed toward the middle of the food way, the soft palate is elevated and the Eustachian tubes slightly opened.

From the foregoing facts we reach the conclusion that the primary function of the nose is for the passage and direction of purified and moistened air current into the pharynx and through the Eustachian tubes into the middle ear and mastoid spaces; and that the pharynx serves a double purpose, the upper division, or naso-pharynx, impelling the inspired air into the larynx, while the lower division, or oro-prahynx, serve to force the food bolus past the epiglottis, or lid of the larynx into the esophagus. The nose has two other functions both of which are necessary to the comfort and well being of the body. First, it contains the terminals filaments of the olfactory, or first cranial nerve. It is a very easy matter for a slight congestion of the middle turbinate to shut off the space containing this nerve and destroy for the time our sense of smell and with its abrogation, a large part of our sense of taste. Second, the nose aerates those accessory air sinuses previously described, which communicate with the meatuses and which are located below, above and behind the nasal passages.

The construction of the mucous membrane of the turbinate bones is one of the many wonderful illustrations of the adaptation by nature of the proper means to perform a given function. The mucosa covering the turbinate bones is termed erectile tissue. It is spongy and elastic and contains numerous large venous plexuses, or network, which can easily fill with blood and enormously increase in size the turbinates and thus narrow the lumen of the air channel. These bodies are further supplied with a large number of very delicate, sensitive, sensory nerve endings, which respond to the slightest change in the temperature, humidity, or composition of the inspired air.

PRACTICAL CONSIDERATIONS.

Taking into account, then the situation of the nose and throat just at the beginning of those most essential divisions of the body, the respiratory tract and the alimentary canal, and further remembering their close and intimate relationship to the eye and ear, and the short distance they lie from the cerebrum or large brain, is it not reasonable and proper that we should do everything possible to preserve their integrity and promote their functional activities? In attempting to enumerate those rules of personal hygiene, the observance of which will tend to keep us free from head catarrhs and colds and infections, and even involvements of other organs, it is always well to bear in mind that the nose and throat are more easily affected by distant reflexes than are any other body tissues. They are very readily influenced by skin reflexes. These are carried either by the autonomic or the sympathetic nervous systems.

This brings us to consider the necessity of the proper care of the skin. Those portions of the integument which cover the neck and the feet are the ones which suffer the most at the hands of modern civilized procedures. If there is anything worse than a tightly fitting starched linen collar, it is a highly polished pair of patent leather shoes. Each of these abominations impedes the return of the blood to the heart, weakens the walls of the blood vessels, and disturbs the delicate balance of the circulation, not to mention preventing access of air and hindrance to evaporation of perspiration. It should excite no surprise that those delicate barometers of the body, the nose and throat respond in no uncertain manner to such insults.

Many people have an idea that if they take their daily tub they have done their whole duty as to the hygiene of the skin and the body. It is this same variety of individual who will go on a cold day to a crowded, illy-ventilated play house, sit near a radiator with all his wraps on, remain for several hours and on leaving instead of taking a brisk walk to quicken the general circulation and aerate the nasal cavities and their accessory sinuses, will take a taxi for home, or the club, in order to breathe in some more dry super-heated air. On reaching his destination he has a heavy, hearty meal and possibly a nap, to be followed by a hot bath just before retiring, which weakens still more the delicate capillaries and the sensitive vasomotor nerves. The next morning he awakens with a stuffy cold in his head, his lids are swollen and glued together, his breakfast tastes miserable and his cigar tastes worse. Several hours after the morning meal, his symptoms not improving, he hies himself to a Turkish bath house to get thoroughly steamed out as he thinks. Instead, he devitalizes still further his demoralized nervous system, sends still more vicious reflexes to his nose and throat,

and by the next day he realizes he has something more than a simple cold in his head. Of course, he has no idea how he got it. Then he proceeds, or should proceed to the rhinologist who, to his utter surprise, tells him that everything he did was wrong, that he has an acute sinusitis involving the anterior ethmoidal cells and the antrum, and that if he does not improve promptly under palliative treatment it will be necessary to remove a portion of the middle turbinate in order to drain the sinuses.

There is another region from which active and pernicious reflexes may be communicated to the nose and throat. I refer to the sacral and pelvic regions. It is well known that nothing has a more deleterious effect on the course of a chronic catarrh, or sinusitis than constipation with its attending intestinal putrefaction, while the rhinologist is almost always informed by his female patients that their head and neuralgic symptoms are aggravated during their menstrual period. I recall the report, a few years ago, by a well known nose and throat man, of a case of menorrhagia completely relieved by a cauterization of the inferior turbinates.

Only a few days ago in our local medical society a case was given of a man who had suffered for several years from bronchial asthma. He has tried a number of physicians and as a last resort consulted a rhinologist. The latter found one antrum filled with a foul smelling dark-colored secretion. On removing this accumulation, which appeared to drain into the antrum by gravity from the ethmoid and the frontal sinus, he was surprised to discover that the asthma vanished. He further stated that the patient could always tell when the antrum filled by a recurrence of the asthma, which he again relieved by irrigation of the sinus.

As would naturally be inferred, the nasal cavities are quite sensitive to eye infections, a conjunctivitis often extending into the nose by way of the lachrymo-nasal duct. A chronic congestion of the turbinates is frequently caused by a high degree of far sightedness, or a combination of far sightedness and astigmatism. The rhinitis very seldom clears up until the error of refraction is fully corrected with the proper glasses.

During the period of an epidemic, or an endemic of an infectious, contagious disease as, for instance, diphtheria, or measles, or infantile paralysis, the physician and nurse are often asked the best method of escaping an attack of the prevalent disorder. They should cleanse the nasal cavities twice daily with warm normal saline, or boric acid solution, and should gargle the throat with dioxygen followed by the saline, or the boric acid. If they want a stronger antiseptic, a weak solution of permanganate of potash 1-10,000 will serve the purpose. They should be advised to avoid public gatherings and to exercise extra precautions in the preparation of all food stuffs, especially green uncooked foods and milk. The water supply also should be above suspicion.

CARRIERS.

Medical science is more and more realizing the fundamental importance of nose and throat hygiene in checking and controlling the spread of the majority of contagious diseases. Not only has it been discovered that at the inception and during the height of these disorders, the secretions of the nose and throat are highly infectious and can be communicated by direct or indirect contagion; but it has been conclusively proved by careful bacteriologieal examinations of the mucus obtained by swabbing the nasal and pharyngeal passages either of persons who have made a clinical recovery from, or of healthy individuals who have been exposed to an infection, that a small percentage of these two classes show the presence of the causative microbes and are harborers, or carriers, of the disease and a menace to the welfare of the rest of the community.

The Klebs-Loeffler bacilli, which are universally conceded to be the cause of diphtheria, display a marked liking for the mucous membrane lining the nose and throat fossae, and even after the individual attacked by them, to all appearances, is perfectly well, they still love to linger, in the hope, possibly, of being sneezed into someone else's olfactory region. So well is this attribute of theirs now recognized, that a number of the State Boards of Health have made it a regulation that no case of diphtheria shall be released from quarantine until there have been made two negative cultures on successive days from the nose and throat of the affected individual.

The human carrier of disease is the most dangerous of all and any measure which will prevent him serving in that capacity is to be commended. It is to be hoped that it will be but a short time until the bacteria which cause measles and scarlet fever and the other exanthematous diseases are discovered. Then the enactment of a law similar to that now in force with respect to diphtheria would be a great advance, since it is known that the virus of these infections is carried in the nose and throat of those affected.

INFERENCES.

The best time to begin the hygiene of the nose and throat is in infancy. Babies and children should be watched carefully to prevent them inserting beans, buttons, gum, pins and other foreign bodies into their noses, mouths and ears. The nasal cavities should be cleansed each night a short time before retiring. All mucus lying in the vestibule, or movable parts of each nostril, should be removed. A toothpick, one end of which is wrapped with sterile cotton, serves this purpose admirably. This simple procedure begun in the first few days of the infant's life and kept up until he is old enough to be taught to do it for himself, will often prevent the formation of adenoids and enlarged tonsils, merely by insuring nasal respiration.

All the texts on nose and throat diseases give a long list of those disorders caused by mouth breathing. The child should be taught that breathing through the nose is as essential to his welfare as eating his meals. Also as soon as the first tooth peeps through the gum, a baby tooth brush should be purchased and its use begun. It is surprising how soon the youngster will want to use it on himself.

Thumb sucking and picking at the nose should be discouraged. Both are excellent means of introducing infectious material.

Colds should never be neglected. Sterile vaseline applied inside of the nose and some on the outside too, is all the local treatment very young children require. Mothers should always be cautioned that a cold may mean the initial stage of a serious malady, like measles, scarlet fever, diphtheria, or infantile paralysis. They should be told that repeated colds cause adenoids, enlarged tonsils, asthma, bronchitis, indigestion, deafness, tuberculosis, and anything else one can think of.

Oft recurring head colds and catarrhs in the adult in the first place signify a chronic hypersecretion, or suppuration of one or more of the accessory air sinuses, which if not relieved may result either in deafness or blindness, and in a few rare cases may be a factor in insanity. A chronic sinusitis is often the biggest factor in the onset of neurasthenia. In the second place, these head catarrhs may be one of many symptoms of a lowered vitality, or a heightened susceptibility on the part of the patient, to those saphrophytic, or feebly pathogenic microbes which are constantly present in the nose and throat. The victim of heart disease, or arteriosclerosis, or Bright's disease frequently suffers from repeated colds and catarrhs.

A negative air pressure in any of the accessory air sinuses of the nose, is a factor which must not be overlooked. It may cause a necrosis of the mucosa with its underlying bone, or it may extend to the Eustachian tube and set up an otitis media, or a mastoiditis. An absence of air in a cavity like the tympanum, or the mastoid cells, always favors microbic activity and multiplication. A negative air pressure is a source of continual annoyance and discomfort to the patient until its cause is discovered and removed. The most frequent causes are a deflected septum, enlarged turbinates, adenoids, unusually large faucial tonsils, and polypi.

Oculists and dentists advise their patrons to return once or twice a year for an examination. If it is necessary to their well being to follow that advice, it is assuredly equally as important for their comfort and health that their noses and throats should be gone over at least as often by the rhinologist and laryngologist.

Influenza in Iceland.—Erlendsson cites experiences at Iceland showing that the severe epidemic of influenza which befell the land in November, 1918, did not differ materially from the disease as observed elsewhere, and it spread in the same universal manner as in other countries, apparently regardless of isolation and quarantine.

Java Chenopodium.—The experiments on dogs and the clinical experience related testify that a variety of Chenopodium ambrosioides grown in Java, has a very powerful expulsive action on ankylostomas in man and dog. It should be followed with a laxative in two or three hours. All the dogs examined in Java were found infected with Ankylostoma caninum.

Reconstruction of the Face.—Llado's twenty-five illustrations show the guiding principles in treatment of deformity resulting from war or other wounds of the face. He describes the French, Italian and other methods of plastic facial surgery, specifying the class of indications for each. He studied the methods directly in the hospitals in France and elsewhere.

Blood Transfusion by Citrate Method.—After having used this method in 100 cases Fleming and Porteous are convinced that it is as good as those of any of the more complicated and difficult methods.

Edema of Lungs as Cause of Death.—The importance of pulmonary edema per se as a cause of death is questioned by Winternitz and Lambert. They conclude that edema of the lungs in general is merely an indicator of some underlying disorder and is rarely, if ever, directly responsible for the death of the patient or animal.

SYMPTOMS AND TREATMENT OF ARTERIO-SCLEROSIS.*

By H. A. Gilliam, Milburn.

Arterio-sclerosis may exist for years without causing noticeable symptoms. It may not be discovered till autopsy. Some other early symptoms are neurasthenia, and a progressive failing of general nutrition.

The arteries are tortuous and feel hard like cords, especially the radial, temporal, brachial and femoral. The pulse is incompressible owing to increased tension and thickening of arterial wall. The pulse should be tested with two fingers, and if felt with the distal finger while compressed with the proxmal finger, there is arteriosclerosis. The pulse has a short ascent, a wide stop and a gradual decline, with hardly no dicrotism.

The left ventrical is hypertrophied and later dilated owing to the increased resistance offered by the inelastic arteries. Then we have the usual symptoms of this type of heart trouble. The second sound is sharp and accentuated. First sound is weak, and in old people surprisingly so. During stage of dilatation the pulse becomes very rapid and feeble, and a mitral murmur develops. The aorta becomes dilated giving an area of abnormal dullness in the chest. Anginal pains develop when the coronary arteries are affected.

The circumscribed variety cause localized manifestations. If of the brain there will be tinitus, vertigo, syncopal attacks, and localized palsies, apoplexies and in old people thrombosis or embolism may produce symptoms of softening of the brain. If of the kidneys, we have an atropic nephritis with all the attending symptoms of this type of kidney lesion. When the peripheral arteries are much involved, gangrene develops owing to narrowing and obliterations of the vessels.

The four diagnostic symptoms are hardening of the radial, temporal, brachial or femoral arteries, increased tension, hypertrophy of left ventricle, and accentuation of aortic second sound. The ophthalmoscope will greatly aid.

Arteriosclerosis is a chronic disease, and prognosis is bad. Though under proper treatment it may be arrested to a certain extent.

Treatment: Remove the underlying cause when it can be found, and correct faulty habits. Enforce rest, promote sleep, regulate exercise and put on an unstimulating diet like skimmed milk. Salines to keep up elimination, iodides for its alterative effect, nitrates and aconite to lower tension.

NEWS ITEMS AND COMMENTS

Dr. E. L. Henderson, who left the United States with Base Hospital No. 59, has returned to Louisville, and has resumed his practice with offices in the Masonic Building.

It its a pleasure to welcome Dr. Henderson, who has been Secretary of the Jefferson County Medical Society, and Councilor in the Fifth District, and has always been a faithful worker in everything of interest to the profession, back to his practice.

Drs. John Walker Moore, McConnellsville, S. C., and Larren R. Ellars, National Military Home, Ohio, have been elected full-time teachers in medicine and surgery, respectively, in the University of Louisville. They will reside in the hospital and will direct the work of the resident intern staff, and the bedside teaching of the medical classes.

Dr. Granville S. Hanes, Louisville, will soon leave for England and France, where he will take up special research work on the cancer problem.

Dr. Thomas C. Holloway, has been discharged from the Medical Corps, U. S. Army, after service overseas, and has returned to Lexington.

A Special War Fund.—The special war fund committee of the Association generale des medicins held a meeting recently at the Paris School of Medicine, under the presidency of Dr. Louis Mourier, under-secretary of state for the medical department of the army. Drs. Bourgeois, Bellencontre and Bongrand spoke somewhat at length of the activities of the war fund committee, pointing out the various forms of aid that had been rendered by the society. The sum of $180,000 has been disbursed, which has inured mainly to the benefit of the physicians of the invaded territory, the widows and orphans of physicians, and students bereft of the necessary resources to continue their studies.

New Method of Incision of Tympanic Membrane.—Lake makes a crescentic or curved incision following the contour of the edge and of about the same extent of the posterior superior quadrant—i.e., a curved incision with the convexity upward. He claims that better drainage is obtained.

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NEXT MEETING, ASHLAND, KENTUCKY.
September 23, 24, 25, 1919.

COUNTY SOCIETY REPORTS

Daviess—The Daviess County Medical Society met at the City Hall, Owensboro, on June 17th, 1919. Twenty-eight members were present.

The president, J. L. Carter, was absent on account of the serious sickness of his aged father. Vice-President A. McKenney presided.

F. S. Clark was admitted to membership.

The death of J. A. Woolfork was called to the attention of the society and D. M. Griffith, S. J. Harris and J. Glahn made feeling and appropriate remarks.

J. T. Dixon reported a case of sporotricosis. The patient was present and all the members examined him. An interesting discussion followed.

J. H. Thorpe gave a description of the effects of syphilis as he saw them in his practice as an eye, ear, throat and nose specialist.

The paper was discussed by several.

S. J. Harris reported an interesting case.

D. M. Griffith moved that Drs. Ellis and Harris be made a committee to see our candidates for the legislature and suggest that no change be made in the State Board of Health. Seconded by Dr. Sherman and carried.

J. J. RODMAN, Secretary.

Fleming—During the present year regular meetings have been held in March, April, May and June. Owing to the influenza epidemic no meetings were held in January and February. We have only thirteen active members, two having died towards the close of last year and three failing to pay their dues. Our meetings are interesting and enjoyed by those who attend regularly. The officers for the present year are, W. S. Reeves, president; J. C. Brice, vice-president; Chas. W. Aitkin, secretary-treasurer. E. T. Runyan was elected to the three year term on the board of censors; C. W. Aitkin was elected delegate to the State Association meeting, and J. C. S. Price and Ribilin as alternates. We hope to have a representative at that meeting.

CHAS. W. AITKIN, Secretary.

Hardin—The Hardin County Medical Society met on July 10th, 1919, at White Mills, Ky. There were present C. Z. Aud, president; H. R. Nusz and S. D. Winstead, Cecelia; C. W. Rogers, Rineyville; C. C. Carroll, White Mills; W. J. Shacklett, Glendale; W. F. Alvey, W. H. Haynes and D. E. McClure, Elizabethtown, and Maj. Guy Aud of the M. C. A. E. F.

A resolution was adopted to hold the July meeting at White Mills each year.

H. R. Nusz reported a case of Empyema treated with bismuth paste.

W. J. Shacklett read a paper on "Summer Diarrheas of Children."

These papers were discussed at length by all

those present, which made the meeting one of the best and most profitable the society has had for some time. The interest in the work of the society is increasing and the doctors of the county who neglect to attend are missing some splendid opportunities for self-improvement and of being a help to others and the profession at large.

D. E. McCLURE, Secretary.

Ohio—The Ohio County Medical Society met at Beaver Dam, Friday, June 6th, 1919, with the following members present: E. W. Ford, J. W. Taylor, E. B. Pendletou, J. O. McKenney, Pal T. Willis, J. S. Smith, S. E. Bennett, J. D. Stewart, and Oscar Allen. A. B. Riley was visitor.

At the morning session J. D. Stewart told us some of his experiences while in the M. R. C., which was the most interesting talk we have had at our meetings for a long while. At noon lunch was served at the hotel.

S. E. Bennett, our president, called the society to order again at 1 P. M..

A. B. Riley and **E. B. Pendleton** were asked to give their experience in the army; both responded with splendid talks.

E. W. Ford read a paper entitled "The Doctors Saddle Bag," which was appreciated by all of us because of its practical value.

It was voted to meet at Hartford the first Friday in July, at noon, have lunch together and begin our regular work at 1 P. M.

Adjourned.

OSCAR ALLEN, Secretary.

Etiology of Yellow Fever. IV.—The majority of guinea-pigs inoculated by Noguchi with the blood of yellow fever patients escaped a fatal infection. There were a number of instances in which the inoculation of yellow fever blood induced in these animals a temporary febrile reaction on the fourth or fifth day, followed in some cases by slight jaundice, but with a rapid return to normal. Most of these guinea-pigs when later inoculated with an organ emulsion of a passage strain of Leptospira icteroides resisted the infection. On the other hand, the animals which had previously been inoculated with the blood of malaria patients or normal guinea-pigs died of the typical experimental infection after being inoculated with the infectious organ emulsion.

Special Privileges for the War Wounded.—A recent order of the Paris prefect of police establishes the use of special car tickets to be furnished to war-blinded or mutilated men whose condition makes long standing in line difficult. These special tickets will permit them to go out on the platform of the "Metropolitan" instead of waiting in the line.

Roentgenographic Diagnosis in Renal Tuberculosis.—In Braasch and Olson's opinion the value of roentgenographic diagnosis of renal tuberculosis does not appear to be fully appreciated. They claim that shadows may be found in approximately 20 per cent. of patients with reual tuberculosis. Positive evidence of tuberculosis may be obtained by this method when all other clinical data fail, and when cystoscopic examination is impossible. Pyelography is occasionally valuable (1) in the identification of renal infections of doubtful nature and (2) in the identification of doubtful shadows in the renal area.

Influenza in Children.—Only about 10 per cent. of the children whose cases were reviewed by La Fetra had pneumonia. About four-fifths of the cases with lung involvement took the form of broncho-pneumonia. The most peculiar feature of broncho-pneumonia cases was the occurrence in six instances of interstitial emphysema. Appearing first above or below the clavicles it extended to the thorax, the arm and the back, in two cases down as far as the nipple and in one instance down the trunk and as far as the middle of the thigh, the crepitations being felt throughout the entire area. Apparently the symptom occurs in only the severest cases, for five of the six patients died.

Blood Creatinin in Nephritis.—Observations on 100 cases of nephritis showing creatinin retention are recorded by Myers and Killian. Of these 100 patients, eighty-five had a creatinin content of over 5 mg. per hundred c.c. of blood, the figures ranging from 5.1 to 33.3mg.; eighty of these eighty-five patients have died. Of the five remaining the condition of three is essentially unchanged, while two have recovered. These two patients showed only a temporary elevation of the blood creatinin. A considerable number of the eighty-five patients were able to be up and about and some showed decided clinical improvement. According to the authors the creatinin gave a better prognostic insight into these cases than either the blood urea or phenolsulphonephthalein tests, which were made simultaneously. It is their opinion that in advanced cases of nephritis the blood creatinin furnishes a more reliable prognosis than any other test.

Cancer of the Stomach.—In his general review of this subject, Hartmann cites statistics showing the constantly increasing proportion of permanent cures after operations for gastric cancer. He has been able to trace 3 of his own patients cured for five years, 3 for six, 2 for seven and 1 for thirteen years, although he has lost track of the majority of his cases.



J. E. South

PRESIDENT KENTUCKY STATE MEDICAL ASSOCIATION, 1919

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EDITORIAL

FORMER GERMAN DOMINATION OF SYNTHETIC DRUGS.

It is becoming increasingly more apparent that in no field was the myth of German invincibility more firmly fixed in the public mind than in that of chemistry, each day emphasizes the unscrupulous limits to which the German chemical "Kings" went in order to stifle any American attempt in the making of synthetics. In the report of the Alien Property Custodian, A. Mitchell Palmer[1] attributes this myth to several reasons: the flooding of the country for years before the war with German chemists; the training of American chemists by German methods; the unquestionable German influence in many of the U. S. chemical establishments and above all the ulterior interest of the German government in aiding the most remunerative of all Teutonic industries. It is well to bear in mind that "the technical skill required for the manufacture of explosives is precisely that possessed by the chemical staff of dye works and is to be found nowhere else;" hence the Imperial government fostered the dye industry, many of the products of which are converted easily into munitions.

In the case of heavy chemicals, such as acids and alkalies, which are consumed in large quantities the prices of production are so low that the cost of transportation is the controlling factor; this prohibited the Germans from gaining absolute chemical supremacy in the United States. But in the branches of organic chemistry—especially dyes and the closely related pharmaceuticals—they not only attained first place here, but "to all intents and purposes a world monopoly." In the United States the conquest was made easier by our ill-advised patent laws, which granted protection without requiring the reciprocal, non-sceret disclosure of all the formula of preparation.

A few years ago *The Journal*[2] *A. M. A.*, discussed the interdependence of the dye industry with that of pharmaceuticals, both of which comprise an amazingly vast complex of products and by-products derived from a few basic materials. However, the exceedingly complicated dye industry was not an insurmountable enterprise for American scientists, as is evidenced by our *post bellum* chemical activities. How then did the Germans retain such a hold up to the time of our entrance into the war? To the amazement even of American chemists, Mr. Palmer has detailed the corrupt business practices of the German chemical trusts which were pursued in this country—practices (abetted, of course, by the Teutonic government) which did not stop short of an intricate system of bribery. And besides all the obstacles—legitimate and illegitimate—placed in the way of honest domestic competition, considerable propaganda was manifest in order to discourage any American attempt to manufacture synthetics. In 1914, nine-tenths of the dyes used in our industries were supplied by the Germans and the great bulk of these by the six largest chemical houses: the Bayer concern; the Badische Anilin and Soda Fabrik; Farbwerke vorm Meister Lucius and Bruning, Hoechst am Main; Actien Gesellschaft fur Anilin Fabrikation; Leopold Cassella and Kalle and Co. Their American branch houses were respectively Bayer and Co., (Inc.) Badische Co., Farbwerke Hoechst Co., Berlin Anilin Works; Cassella Co.; and Kalle and Co. Therefore when war broke out in Europe it appears that American agents were ready seats for enemy propaganda. Some even went so far as to attempt to corner the phenol on the market in order to hinder the making of explosives for the allies, although by so doing they were crippling other American activities; there seems to be no doubt that they were in close touch with Bernstorff and his agents. With our entrance into the fight, every sort of subterfuge was resorted to by the Germans to conceal their interests in this country in order to still retain their strangling grasp on the dye and drug markets. However the "Trading

with the Enemy" Act allowed Mr. Palmer, and his successor to adopt vigorous methods, (exposing the wicked treachery) which gave our infant chemical industries a wonderful impetus and protection from the unscrupulous machinations of the German financial imperialists. To-day Congress is debating further measures to insure the security of the future against such chemical aggression as was witnessed in the past.

Kentucky's late Senator, Ollie James, was the leader of the movement in Congress in this matter, and the medical profession and people of Kentucky expect the active interest of the Kentucky delegation.

1. The Chemical Foundation, Inc., by A. Mitchell Palmer and Frances P. Garvan.

2. Editorial: "The Tariff on Dye Stuffs and Drug Prices," *J. A. M. A.*, Vol. 67, p. 881, 1916.

SCIENTIFIC EDITORIALS

FOLIA UROLOGICA.—THE ROLE OF HEREDITY.

By Prof. Dr. C. Adrain.

(Abstracted and Translated, Lehmann-Stettin.)

The main points of interest and of importance for the practician in the inheritanee of urinary or urological affections are about the following.

1. The frequency of inherited urinary affeetions justifies a special clinical contemplation.

2. Like some bodal peculiarities, also certain anomalies and malformations of the genito-urinary apparatus can be transmitted by inheritance.

Of these the eystic kidney degeneration (cystic kidney, polycystic degeneration of the kidneys) is of special importance on account of its eminent familiar or hereditary characteristics.

3. Of the other affections here discussed the inheritance is of greatest importanee in the disturbance of nutrition and metabolism, summed up in group IV.

These affeetions (alkaptonuria, cystinuria, diabetes, formation of stone of cystin, uric aeid, oxalate, ete.) are transmitted predispositions i.e., inherited dispositions for the affections named.

4. A direct inheritanee of the affeetions named does not occur. Only one single eertain case of cystinuria has been observed in the newborn; and reports have been published of alkaptonuria "in the very first days of life."

Occasionally the heredity will have the influence upon these affections that they in the same individual alternate with other f. i., goutic or rhumatic affeetions or oceur in different members of the same family. It seems correct to consider the affections named as different mainifestations of the morbid disposition.

5. Opposite to the formation of cystin,—uric acid—and oxalate stones; heredity does not play any role in the disposition of stone formation in case of phosphate conerements.

As these seem to develop without exeeption only in consequence of inflammations of the mucous membrane, their development depends mainly upon the presence of an inflammatory process in any part of the urinary passages.

And never will be found the alternating occurrence of gout, chronie rheumatism, diabetes, adiposity, etc., characteristical in families with uric acid stones and oxalate stones.

6. Up to now we are unable to give a sufficient explanation of the quite frequent oecurrence of albuminuria in different members of the same family in different ages through several generations; likewise we miss any explanation for the cases generally conceded of familiary hereditary nephritis (especially of chronic induring nephritis).

7. Cases of congenital contraeted kidney in the children the mothers of which have had nephritis are not affections called hereditary, usually, but are caused by direct poisoning of the fetal kidney by the blood of the mother.

8. In another group of diseases as in phosphaturia, enuresis nocturna, so-ealled hereditary polyuria (hereditary form of diabetes insipidus) and perhaps in some forms of the uncomplicated essential diabetes mellitus the neuropathic moment seems to bring about the affection and seems to be of importanee for the inheritance.

9. Renal hemophilia is purely local lesion limited to one part or one organ, the kidney, basing upon hereditary alterations and appearing shorter or longer time after birth (like other cases analogous in pathology).

10. Other affections, especially alkaptonuria, seem to be a consequence of marriage between blood-relations (first cousins, uncle and niece, etc.) Accordingly the affeetion ean be considered a degenerative lesion or anomaly depending upon impregnation by blood-relation.

Similar observations have been made here and there among the ancestors of patients with cystinuric and polycystic kidney degeneration.

SHALL WE "PEEL" THE KIDNEY AS THE LAST RESORT IN BICHLORIDE POISONING?

Hagner Washington, D. C., reports the following two fatal cases of bichloride poisoning, contrasting at autopsy and showing the difference between the kidneys subjected to decapsulation and drainage of the pelves and the kidneys not subjected to surgical intervention.

Case 1. Colored woman, age 28, was brought into the Emergency hospital with a history of having just taken five biehloride tablets. The usual treatment was instituted. Shortly after entrance to the hospital, her urine showed a small quantity of albumin, granular and hyaline casts and pus. These findings remained practically the same, with a larger quantity of albumin, up to the date of death, when the albumin was greatly increased in quantity and there were present numbers of hyaline, granular, blood and epithelial casts. Acetone was also present; this was so strong as to permeate the whole ward. The average quantity of urine obtained was 30 oz. daily; 24 hours previous to her death she passed 16 oz. She had hemorrhage from the nose, gums and uterus, and a large amount from the stomach and intestines.

This patient died eight days after admission to the hospital. At autopsy, as is usual in these cases, the stomach and colon were the seat of the greatest lesions, being ulcerated and haemorrhagie to a marked degree. The kidneys were very much enlarged and congested, showing fatty change mieroseopieally.

Case 2. On Christmas day I was called to see a female, age 23 who had taken biehloride on the 17th of December (eight days previous). It was impossible to ascertain the exact amount of the poison taken. She had, during the eight days, the usual treatment for this condition. For three days her urine appeared normal, and then blood, pus and albumin in daily increasing amouuts were noted; simultaneously the amount of urinary output was decreasing. During the twenty-four hours prior to my seeing her she had suppression of urine, no urine being obtained by frequent catheterization.

On my first visit she appeared very ill; her pupils were dilated, she was somnolent and irritable, and vomited at frequent intervals. At this time the vomitus and the stools showed but small traces of blood although the lips were cracked and the gums spongy. As her urinary condition seemed the most urgent, I advised kidney decapsulation and drainage of the pelvis. This was done at Garfield hospital, under uitrous oxide and oxygen anaesthesia. The left kidney was enlarged and so full of blood as to almost burst; the right kidney was in the same condition, but to a more marked degree, being perfectly enormous.

On decapsulation free hemorrhage was noted, and opening the cortieal portion to insert a tube the hemorrhage was most profuse. In the next twenty-four hours 18 oz. of urine was obtained from the bladder on eathcterization, besides free drainage of urine into the dressings. The urine increased in amount, showed some blood and a few granular casts; the second 24 hours showed 30 oz. of urine into the bladder besides drainage into the dressings. Patient's general condition was improved, as was her mental eondition, and I felt almost hopeful of her recovery.

On the third day after the operation she had a severe hemorrhage from a point just behind the lower molar tooth. This could be stopped by pressure, recurring on removal of pressure. Her urinary condition, however, continued to improve. On the fourth day she began to have hemorrhage from the uterus, stomach and intestines. On the night of the fifth day patient died rather suddenly, thirteen days after taking the poison. For twenty-four hours prior to her death she passed over 40 ounces of urine, speeific gravity 1016 and almost 2 per cent urea.

At autopsy the gastrie and intestinal conditions were identieal with the other ease. The kidneys were much smaller and less congested than at the time of operation.

The following is a pathological report of the two cases:

Case 1. Kidney, large, flabby. Capsule rather loosely attached. Kidney structure largely replaeed by fat.

(Microscopic) Marked congestion. Glomeruli only fairly well preserved. Tubular epithelium shows marked degeneration. Moderate leucocytie infiltration.

Case 2. Kidneys about normal size. Denuded of capsules. Lymph-covered area on eaeh kidney at side of end of drain plaeed at operation. General congestion on removal.

(Microseopie). Marked congestion. Glomeruli generally well preserved, as also is the tubular epithelium. Slight leucocytic infiltration.

This poison is eliminated by the mouth, stomach, large intestine and kidneys, and while we may be able by operative intervention to overcome the renal condition, unfortunately it has no influence on the other organs that eliminate this poison.

EIN FALL VON PROTRAHIERTER ANURIE NACH SUBLIMATVERGIFTUNG.

VON

DR. G. A. KOLOSSOW.

1. Sublimate poisoning produces various alterations within the kidneys, leading generally to parenchymatous nephritis, sometimes to glomerulo-nephritis.

2. Not so rarely calceous deposits; the origin of which has not been cleared up entirely have been found within the kidney.

3. There is no special "sublimate kidney."

4. Clinically the signs of sublimate poisoning affecting the kidneys are in light cases only albuminuria and formed elements in the urine; in severe cases anuria and uremia.

5. Uremia in case of sublimate poisoning means generally exitus.

6. Anuria can persist for several days (five til seven) without intense general symptoms.

7. Edebohls' operation is in such cases, the last refuge to be used; only, when all other remedies are without effect; but results like in cases of eclampsia cannot be expected.

CARL LEWIS WHEELER.

PRESIDENT'S ADDRESS

GUARDIANS OF PUBLIC HEALTH.*

By JOHN G. SOUTH, Frankfort.

I cannot refrain, at this time, from saying to you that I am thoroughly cognizant and deeply appreciative of the great honor you have bestowed upon me. I confess that I lack the power of speech to aptly express my gratitude. I shall endeavor to serve you so faithfully that you will know how grateful I am.

I need not attempt to tell you of either the accomplishments or honors of this body. Its illustrious dead need no empty compliments. This society and the medical profession of Kentucky always look with love and pride upon the name of McDowell, Gross, Yandell and others whose names and fame are inscribed in our hearts and upon the pages of history in letters of gold.

Nor shall I attempt to proclaim the merits and splendid achievements of the surgeons and physicians who now compose this society and who are the peers of any body of medical men in the world.

I must here pause to welcome back into our midst those members who have so nobly and with such sacrifice to themselves, their families and their patients, served in this war. Their honors have been far greater than their rewards. We are proud of them and their records. Brothers, in the name of the Kentucky State Medical Association, I express to you our love and gratitude for your service to our country.

We thank God you are safely home and, that no more of you are to make the supreme sacrifice.

When the call to arms came and the war drums rolled, there was urgent call for medical officers for an army of five million and, for a navy that might reach the million mark. How wonderfully you responded. Within six months fifty thousand doctors had volunteered and almost forty thousand had been accepted and had been commissioned. In addition to this thirty thousand doctors were rendering most necessary and valuable work on examining and advisory boards. Our medical service within a short time was greater than that of England, France, Belgium, Canada and Australia combined.

It is with especial pride that I point to the fact that about one-third of the members of this Association promptly volunteered and served. We love and honor you for it and welcome you again and again.

Having served as health officer continuously for more than twenty years, I naturally have a hobby. It is the guardianship of public health. Please permit me to ride my hobby and talk about Guardians of Public Health.

"Public health is the foundation on which rests the happiness of the people and the strength of the nation, and the conservation of public health is the first duty of a statesman." This was said in the British House of Commons by the great Disraeli nearly a century ago. Need we any further proof of the wisdom of these words than that which the world war has furnished?

When our country was called upon for the the sake of humanity to do its part in crushing the Hun, our first thoughts and efforts were to select soldiers from those physically fit and then to keep them fit to fight, for fight they must with every cell and fiber of their being, for the honor of the womanhood of the world, for the protection of the helpless, for humanity, decency, democracy and justice, and pay the supreme price, if need be, that liberty and freedom be not swept from the face of the earth forever. And how they did fight: These American men, fit and splendid in the consciousness of their matchless efficiency and strength! How these almost untrained American boys met the superb troops of the Kaiser and crushed them, is the story known to all. How they fearlessly

* Delivered before the Kentucky State Medical Association, Ashland, September 23, 24, 25, 1919.

charged into the deadliest fire the world has ever known, and charged and charged again until they carried Old Glory over the top and placed the star-gemmed flag of the republic above the strongholds of the Beast of Berlin.

Would to God our Guardians of health at that dread time could have delivered into our armies one hundred per cent of those drafted physically fit instead of the seventy per cent that we were forced to select. Think of it, three out of each ten of our men of draft age unfit for service, helpless to fight for home or country. Selected, too, from ages that should represent the flower of manhood. There were a few more than three millions of men examined and nearly a million rejected.

That Guardians of Public Health are greatly responsible for this we will not deny. Then is it not time to inquire, who are guardians of public health, and what are they doing to guard it, and is the public cooperating to the fullest extent?

Let us divide Guardians of Public Health into two broad classes; first, public officials with power authorized by executive and legislative bodies; second, the public itself.

International, Federal, State, County and Municipal Boards of Health belong to the first class.

The second class is made up of doctors nurses, preachers, judges, teachers, organizations, parents and of all business and professions.

The functions of international health officers briefly named, are the framing and enforcing of such laws and regulations as will best protect the health and lives of the people of their own and neighboring countries.

Some of the more important functions of federal health officers are to promote health activities of every description; to assist in crystallizing into laws advanced ideas for the betterment of health; to collect information regarding the threatened invasion of epidemics of any and all diseases, and to give every aid to their states to fight them; to conduct a vital statistics department, and collect and classify morbidity reports; to pay especial attention to proper quarantining against disease invasion at sea ports and border lines; to maintain laboratories for practical and research work, to lend trained assistants to medical officers in the states in time of distress from epidemics, storms and floods, etc.

And what of the function of the state health officers? They are to advise and assist the state legislature, even at the risk of being called lobbyists, in framing and passing proper laws to protect the health and lives of their charges; to cooperate with and seek the assistance of every agency known to medical science for protecting the health of the citizens of the State; to appoint local boards of health and to establish bureaus of sanitation, of bacteriology and epidemiology, of tuberculosis and of venereal diseases, of pure food and drugs and of vital statistics; to examine those seeking the right to practice the healing art in the State, and to license those found competent.

My time is so short that I am merely attempting to point out major duties. Let us pass on to the duties of county and city health officers. Fellow Guardians of Public Health, are you bending every effort to improve health conditions in your counties and cities? Do you realize that the coming man power of your country, whether for war or labor, must grow up from babies well born? Are you insisting on a strong fight against venereal diseases that rendered unfit for war service such enormous numbers of young men? Are you making a drive against tuberculosis, typhoid fever and all preventable diseases? Are you insisting upon receiving reports from all your doctors of contagious and infectious diseases? Do you at once properly quarantine and placard them? Do you insist upon the proper vaccination against smallpox of all school children and teachers, of all employees of railways and transportation companies, and of all employees of large manufacturing plants and in fact, all persons who are constantly brought together in large bodies?

What about your housing problem; have you a few misers in your community owning hovels unfit for human habitation, and renting them to the poorer classes at enormous profits?

Are your schools, public buildings, hotels, restaurants, dairies and food and drugs carefully inspected? Do you fearlessly prosecute friend or foe for endangering the health and lives of your charges?

Do you keep in touch with your State Board of Health and call for help promptly when you need it? Are you reading its bulletins and are you asking the aid of its laboratories, its sanitary engineers and its trained helpers?

Do you attend the schools for health officers and learn the advanced means for the protection of public health? If you have devised new means or methods yourself, do you promptly give them to the medical profession? If you have done all this and then sought advice and burned the midnight oil while racking your brain for better methods of conserving health, then you are truly a guardian of public health.

All medical men are quasi authorized health officers. Fellow doctors are you ...

operating to the fullest extent with your local and state health officers? Are you promptly and correctly filling out birth and death certificates? How about that last obstetrical case, after you heard the first lusty cry of the infant did you promptly and thoroughly cleanse the eyes of the little being and drop in the silver solution? Surely you did for you know what an awful thing blindness is. You realize that the future of this country may some day depend upon upon the accuracy of those eyes, whether they be peeping over the sights of a giant cannon or directed into the field of a microscope.

Mother and baby having been cared for, let us not forget that birth certificate, there is no time like "now" for doing things. Having filled in all questions except as to the name you now turn anxiously to the mother and enquire what the name is to be. Do not be shocked in case it is a boy at being informed you are to write "Henry Ford," and if for a girl you may be asked to write Ammonia. A word of caution here; if it happened to be twins you may make the same mistake that old Doctor Fetchum made on a similar occasion. The old doctor stepped into the next room where the anxious father was waiting and informed him that he was the father of twins and inquired, "What are you going to name them?" The father, in his excitement exclaimed, "Thunder and lightning" and dear old doctor Fetchum immediately wrote "Thunder and Lightning" into the birth certificates.

What if they have been named Thunder and Lightning, you or some fellow doctor will have to stick to them. If the mother cannot possibly nurse them you must be sure that they get the right kind of milk. Has the dairy barn from which they get their supply been inspected and passed, have the cows been tested for tuberculosis recently and found negative? What about the nurse bottles? Are you sure they are being properly sterilized? Have you fully instructed the mother or nurse as to their care? Have you vaccinated the children against smallpox? Now that they are growing so fast into childhood, are you sure the school they are to enter is well lighted, well heated, and ventilated, that the desks are the right kind and size? Does the school have proper medical and dental inspection? Are pupils classified as to mentality? We cannot follow them further here as I am sure that you have already seen to it that their home surroundings are the best, that they have been taught to properly ventilate their sleeping rooms and to love fresh air. To cleanse and care for their teeth and their little bodies, and instructed in all points of personal hygiene.

Having watched over them so patiently, you have started them well along the road of life; may their path be just undulating enough to avoid monotony, and, when the crest is reached and they start upon the descent into the valley of shadows, may the passing be as gentle as the fading light of a summer's day.

Yes, I am sure the doctors are doing their part and that they are being assisted in this vital work by a most splendid type of nurses.

The preachers, too, are now working hard to help us fight disease by delivering health sermons on frequent occasions. They were formerly satisfied with a brief statement—"Cleanliness is next to Godliness." They now know that there can be no Godliness in the unclean. They have swept the dust and cobwebs from the dark corners of the old church, lowered the beautiful stained glass windows and let in God's sunlight. Aye, they have even put in individual communion cups and are no longer afraid to talk to their congregations about the dangers of sexual disease. We are surely thankful that they have about gotten rid of the few black sheep of their profession who have been in the habit of evading the local option laws by freely imbibing from a bottle of Peruna or Swamp Root and then sending into the newspapers a large photograph of themselves and a glowing testimonial.

Jurists and juries are now upholding the health laws everywhere, and oh, how inspiring it is to be the health officer. You must all know how Judge Stout of the Franklin Circuit Court and each and every member of the Kentucky Court of Appeals recently sustained and protected your health laws from a band of practical politicians. Please read the learned decision of Judge Bush of the Calloway Circuit Court in the case of a fanatic of Murray, Kentucky, who professed to believe he was serving God by defying the laws of his state, and thereby jeopardizing the lives of his fellow men.

Now may we hope for the hearty cooperation of railway and transportation companies' officials in having clean and well ventilated cars and vehicles for travel. Let us hope that every train will be properly and frequently cleaned and that they will be provided with all necessary sanitary equipment. That they will provide sanitary toilets at all stations both in the cities and in the country.

Teachers we ask your earnest support. In your schools and guardianship of children you have a wonderful opportunity to carry on a health campaign.

The Federation of Women's Clubs has been of untold value in state health work, especially in Kentucky under the leadership of its president, Mrs. Lafon Riker.

The work of the Red Cross and kindred organizations has been marvelous and no proper estimate can ever be made of the life-saving work they have done and are doing.

I must enter a small note of complaint against a part of the public at this point. While the great press of this country has assisted ably in conducting health campaigns, it is inconceivable that a few of our great newspapers and magazines continue to print most misleading and dangerous advertisements of quacks, charlatans, so-called cures and patent medicines of injurious type. I believe I am safe in the statement that this form of advertisement has cost this country far more lives and money than the world war.

Parents, there are no such powerful agencies for public health work as yourselves. When you have brought a child into the world you owe it to the child to protect it from all preventable diseases and, you owe it to society to teach the child to protect the health and lives of fellow beings. Are you using every agency to this end?

I am afraid that we cannot fix the responsibility upon either of the two classes of Guardians of Public Health mentioned before, but rather let the two classes share it. A little criticism will only spur us on to better the following statistics:

It is with amazement that I tell you that you will hear, that of the draft army who actually got to camp, after the painstaking examinations of the draft boards, 8 out of each 1000 had tuberculosis; 37 had venereal diseases, 5 had trachoma, that the teeth of four out of each thousand were so defective and 7 in each 100 had such defective vision as to render them totally unfit, and that 1 in each 500 were drug addicts.

As President of your State Board of Health, I take this opportunity to express our confidence in the medical profession of the State. We believe local health officers will do their full duty as authorized guardians of public health. The Kentucky State Board wishes to enter an earnest plea to the public to cooperate to the utmost in the fight to save human life and to solemnly warn them that an unusual effort must be made to fight off the impending influenza-pneumonia epidemic.

In closing, let us pray that the splendid record and patriotism of Kentucky doctors in the World War, will be an inspiration to carry on. That the patriotism of war has brought to us all a patriotism of Peace. That the awful loss of life has burned into the souls of men a greater determination to protect life and health.

ORIGINAL ARTICLES

CASE REPORT—KNIFE BLADE REMOVED FROM ETHMOID; IN POSITION TWENTY-TWO YEARS.*

By Gaylord C. Hall, Louisville.

On January 14th, Mr. E. N. O., aged 38 years consulted me on account of sever pain in the left side of the face and under the left eye.

Examination by transillumination showed the left antrum dark. Looking into the interior of the nose I found a rather abundant purulent discharge and noted a foul odor. The lower nasal fossa was fairly patent but the middle meatus was entirely blocked by a mass of polyps and granulation tissue, which bled rather freely on the slightest attempt at probing.

The pain and discomfort in the side of the face being of recent origin it was decided that this was an acute exacerbation of a chronic condition.

Under cocaine a puncture of the internal antral wall was made under the inferior turbinal and a large quantity of pus washed out. This pus had a very foul odor. Following this the pain was relieved and the patient more comfortable.

It was explained, however, that this hole would close after a few days and that it could in no way result in a cure of his underlying condition. The more extensive operation was advised and accepted.

After suitable preparation, on January 20th, under a local anaesthetic I removed the anterior third of the inferior turbinal and made a large hole in the internal antral wall, establishing permanent drainage there. After completing this part of the operation I prepared to remove the middle turbinal and the ethmoid.

On attempting to make a cut with a scissors in the middle turbinal I encountered an obstruction that defied all attempts to break through. Attempts to cut on either side of the middle turbinal were blocked in the same way. I finally inserted a strong forceps and caught this obstructing material, cautiously working it loose until it was free and I was able to remove it.

I found it to be a thin, black object looking like a piece of slate, an inch and a quarter

*Read before the Jefferson County Medical Society,

over all and five eighths of an inch from side to side. The patient explained that it was a part of a knife blade and such it proved to be on close inspection.

The history in connection with this specimen is of considerable interest. Twenty-two years previously this man had been stabbed, the point of entrance being at the lower outer angle of the left orbit. At this point a white scar is at present to be seen and palpation reveals a slight loss of bone at the rim of the orbit.

The knife evidently passed directly inward beneath the eyeball and entered the ethmoid back of the lachrymal bone.

Immediately following the stab wound the injury was dressed by a prominent surgeon here, now deceased, and a piece of the blade removed. Following his injury the healing was prompt and without particular incident and until his present attack the man was free from symptoms except for an occasional cold and what he termed a chronic catarrhal condition.

It is of further interest to know that notwithstanding the proximity of this wound to the eye ball and the lacrimal apparatus neither seem to have been disturbed. There is no tearing nor limitation of the movement of the eye ball and the vision is good.

In order to determine the frequency of records of foreign bodies in similar situations I reviewed the literature from 1912 through the Index Medicus of the Laryngoscope. The references in the literature are very infrequent so that this may be classed as a rather rare condition.

Carson, in the *Interstate Medical Journal*, March, 1913, reports a case of a stone in the antrum.

Irvin Moore, in the Proceedings of the Royal Society of Medicine, section of Laryngology, 1917, reports a foreign body in the right maxillary antrum causing neuralgia. This body was a piece of aluminum but it had not caused suppuration or polyp formation.

Case 2.—Cystic polypus springing from the right antrum.

Mr. H. K., age 18 years, consulted me May 14, 1914, with the following history. He is well grown for his age and in good general health. He has a peculiar muffled tone to his voice due to a nasal obstruction. He states that his nose has been stopped up for the last six years, being much worse on the right side where his trouble seems to originate. Five years ago he was operated on and had numerous polyps removed from the right side of the nose and stated that some of them were filled with fluid. Following this operative procedure he obtained a slight period of relief from his symptoms.

These returned after several months and two years thereafter he went to another physician who operated under the same circumstances and with but temporary success.

Examination shows the right side of the nose completely occluded with a large polyp of glistening appearance. This polyp seems to begin under the outer wall of the middle turbinal rather far back and extends down into the naso pharynx, occluding both sides of the nose and pushing the palate forward.

Transillumination shows that the frontals and the antra on both sides are perfectly clear.

Operation was advised and accepted. Under cocaine, after the usual preparation an attempt was made with a Sluder knife to sever this polyp under the middle turbinal. Following the first cut the tumor was seen to become noticeably smaller and a considerable quantity of straw colored liquid escaped out of the nostril and into the naso pharynx. After this all the remainder of the growth was removed and an attempt made to follow a thin white membrane which led up under the middle turbinal but this was not successful. The nose was packed and healing uneventful and the nose was perfectly free for a time.

After several weeks, however, this growth returned and was again removed. This was repeated several times without permanent success. Finally on July 1, 1914, I removed the whole of the middle turbinal and opened the antrum under the inferior turbinal. The antrum was filled with a thin, straw colored liquid like that which had escaped from the polyps. After the turbinal was removed I could trace the pedicle of the polyp into the opening of the antrum in the middle meatus.

Following this operation the nose healed completely and there was no further return of the trouble.

Pursuing the literature for reports of similar conditions I find a number of references, nearly all of them foreign and not all of them exactly similar to the case reported.

Moore reports a case of a polyp of the maxillary sinus extending into the naso pharynx in the proceedings of the Royal Society of Medicine, Section for Laryngology, June, 1915.

In the *Journal of the Canadian Medical Society*, January, 1916, Dr. Gibbs Wishart discussed the origin of the nasal antral polyp, stating that the pedicle is attached to one of the walls of the antrum and reported six cases of his own which he had verified by the radical antrum operation. He states that these cases did not bear out the observation of St. Clair Thompson that pathological secre-

tions of all kinds in the nose are the general immediate cause of these inflammatory hypertrophies. He likewise dissents from Phillips who states that a history of previous attacks of purulent sinusitis is obtainable.

Regarding these observations it is worthy of note that there was no evidence of pus in the case reported nor in another case that the writer had seen.

VENOUS THROMBOSIS OR ORBITAL CELLULITIS; REPORT OF A CASE.*

By Samuel G. Dabney, Louisville.

On the afternoon of Tuesday, January 14th, 1919, I was called in consultation to see a lady aged about thirty years, with the history that a few days previously she had gone to a local hospital after having had several teeth extracted. On Monday, the day before I saw her, she complained of having earache and her ear began to discharge. Her morning temperature was normal, evening 99.2 degrees F. She said she had felt some chilly sensations, but the chart shows no such record. Tuesday evening her temperature was 105.3 degrees F., but there had been no further chills and no perspiration. Her temperature showed typical septic fluctuations, ranging between 100 degrees and 105 degrees F. throughout the remainder of the week, and the ear suppuration continued. There was noted slight tenderness over the mastoid region, but the patient complained of no distinct pain about the ear.

When I saw the patient Tuesday evening it seemed almost certain that infection through the blood stream had occurred and that she had a septic thrombus. Her condition remained about the same Wednesday, there being a variation of four or five degrees in her temperature, during the day. Thursday morning (36 hours after I first saw her) there was noted a distinct protrusion of the eye on the affected side, with marked edema of the eyelid and face, and she had double sight from partial immobility of the eyeball. The pupil on the affected side was slightly larger than the other, and ophthalmoscopic examination showed some engorgement of the retinal veins.

I told the attending physician that I disliked very much to make a diagnosis of a great rarity unless the symptoms were unmistakable; that I had only seen one case of thrombosis of the cavernous sinus, and in that case the diagnosis had been apparently positive. The patient (a man) had died within forty-eight hours. This case suggested such a diagnosis.

We saw this woman with a suppurating ear, with slight tenderness about the mastoid region and angle of the jaw, with temperature ranging from 99 degrees to 105 degrees F., with a definite history of chills, later with dilatation of the pupil, protrusion of that eye, edema of the eyelid and face, with double sight due to immobility of the eyeball, and slight engorgement of the retinal veins. With this clinical history I believed it was one of those rare cases which justified the diagnosis of thrombosis of the jugular vein or the lateral sinus which had extended upward and caused secondary involvement of the cavernous sinus.

I told the attending physician that I knew of but one other thing it could be, and that was an orbital cellulitis which pressed the eyeball forward and produced the ocular symptoms, this being entirely distinct from the aural manifestations. I said it would seem very odd that this woman should have two distinct and unrelated lesions, viz., an orbital cellulitis pushing the eye forward and producing typical symptoms and also at the same time a suppurating ear, although, of course, such things were possible. Thursday evening there was noted marked redness with swelling and every appearance of an abscess of the right ankle which was thought to be a metastatic abscess.

The Friday morning chart showed that the patient said "something broke" in her head during Thursday night, and she had a discharge from her nose. I cannot be certain now that the discharge consisted of pus, but this is the presumption. To make a long story short, the symptoms subsided, the temperature receded to normal, and the patient now feels well. The ankle is still slightly swollen and red. The temperature has been normal for two days, protrusion of the eye is no longer apparent, and the edema has disappeared.

I might add that examination of the blood showed white cells 10,000. The streptococcus was sought but none found in the blood.

Had it not been for protrusion of the eye I might have made the mistake of opening the lateral sinus in this case. After studying the clinical manifestations, however, I concluded that if there was thrombosis of the lateral sinus, the chances were the cavernous sinus was already involved, and in that event operation would be useless.

In the light of subsequent events it would seem probable that the eye trouble was due to orbital cellulitis rather than sinus thrombosis. The case was a puzzle and I thought it of sufficient interest to warrant detail record.

*Clinical report before the Louisville Medico-Chirurgical Society.

(January 29, 1918. The patient seems now convalescent except that the ankle is still swollen and painful. All anal ocular symptoms have disappeared.)

REPORT OF AN INTERESTING OBSTETRICAL CASE.*

By Ben Carlos Frazier, Louisville.

On January 8th, 1919, Dr. H. E. Tuley asked me to visit a female patient of his who had a slight sanguineous vaginal discharge which had persisted for several days. He had seen her the day before, and although she was supposed to be about six months advanced in utero-gestation, no fetal heart sounds nor other evidence of a living child could be detected. Shortly afterward a message was received that the patient was on the way to the hospital and for me to see her there, which I did.

The woman was thirty-six years old, the mother of six living children, and I believe Dr. Tuley delivered three or four of them. She said no trouble had been experienced in any of her previous pregnancies, but the present gestation had seemed unusual in some respects, that she had been dizzy at times and felt quite ill, and that there had been considerable nausea.

Examination revealed the membranes protruding into the vagina but there was no cervical dilatation, the os being very rigid. I was about ready to leave the hospital, and thinking I had gone the nurse telephoned Dr. Tuley to come at once as the patient was having severe abdominal pain. I waited for the arrival of Dr. Tuley before making any further examination. We then examined the patient together and found the condition about as already described. That was at five-thirty P. M., and we concluded that it would probably be three or four hours before delivery could be safely completed. When I returned at seven forty-five P. M., the patient was having severe pains but no progress had been made. The vulva was distended and I thought I could feel the outlines of the head through the membranes. Chloroform was administered at once and within forty minutes a dead six-months fetus was delivered without rupturing the membranes.

After the patient was anesthetized it was soon discovered there was a breech presentation; but by careful manipulation and some delay the membranes and fetus were extracted absolutely intact. The patient vomited several times during and after delivery, and the after pains were so severe that the administration of morphine became necessary to afford relief. A few hours later she became quiet and is now practically well. Her temperature never went above normal and the pulse was about eighty.

The absence of symptoms in this case seems to me quite unusual. The woman is healthy and has had six children all normal deliveries; this baby had been dead for nearly a month judging from its appearance; yet she had absolutely no abdominal discomfort until two or three days before; the symptoms were so trivial that she did not even mention the matter to her husband until the previous day when he immediately sent for Dr. Tuley. I am certainly much gratified at the outcome.

DISCUSSION:

H. E. Tuley: This case was extremely interesting to me because I have been closely associated with the family for many years. This woman's oldest child is nine years of age, she has six living children, this being the seventh pregnancy. She had no disturbances whatever during any of her previous pregnancies. I delivered her three first children, the fourth was born while I was absent from the city. I would have delivered the fifth, but just then "twilight sleep" was at the zenith of its popularity and she was persuaded to try it. Her mother lived in Chicago and insisted upon the patient coming there and placing herself under the care of a physician who claimed to be an expert in the use of twilight sleep. However, the experience was not altogether satisfactory and the patient decided that the next time she would be delivered in the old-fashioned way.

In March or April of last year while visiting in another city, and feeling that she had already done her whole duty to society in having children, she decided to consult a birth control society. She said the woman physician in charge of this movement gave her full instructions how such matters could be controlled and she was absolutely certain that conception had not occurred as she had followed directions. When menstruation failed to appear at the regular time she could not believe she was pregnant and thought she might be "in the change of life."

The death of this fetus probably occurred about the middle of December. The patient was quite observant of herself and when my first examination was made the fundus of the uterus was two fingers breadth below the umbilicus. We know the fundus at six months should be at the umbilicus, and she was certain this had been true prior to that time, and she had also felt fetal movements. A bloody vaginal discharge developed and being certain something was wrong she came to see me. No fetal movement had been noted for about two weeks.

*Clinical report before the Louisville Medico-Chirurgical Society.

In the management of cases of this kind we are apt to err by trying to hasten delivery. I recall one such case which has always been a lesson to me. The fetal head at five and a half or six months is out of all proportion to the size of the body and where the baby is dead there is usualy a breech presentation. There is always a temptation to exert forcible traction upon the presenting part and thus hasten the delivery. Such feti being soft and friable the head is easily torn from the body by traction and may be thus left in the uterus which actually happened to me in one instance. By trying to remove a cork from a bottle one can appreciate the difficulty of extracting the head of a dead fetus from the uterus with an undilated cervix.

Dr. Frazier's plan of delaying until the entire uterine contents could be extracted without rupturing the membrane and making use of careful manipulations, was decidedly the best proceedure to be followed.

F. C. Simpson: I am glad Dr. Tuley emphasized the importance of not making traction in delivering dead feti and in abortions, etc. Many years ago a member of this society called me in consultation in a labor case saying "he had pulled the head of a dead child off and could not get it out of the uterus." It was one of those cases in which the cervix had not dilated and forcible traction had separated the head of the fetus from the body. Fortunately for me the head had descended after he had tried to extract it, and by placing my finger in the fetal mouth it was easily removed. We should be careful about making traction in such cases.

B. C. Frazier, (closing): The majority of us probably handle cases like the one reported in the manner described by Dr. Tuley. I have seen only three or four of them in my experience. I have had only one accident of the nature mentioned by Dr. Tuley, i.e., where I delivered the body of a dead fetus with breech presentation and left the head in the uterus! I tried for what seemed to me forty hours,—but presume it was no more than forty minutes,—to extract the head before it was finally accomplished. I had no chloroform and no one to assist me. Persistence is the most important item in such cases.

In the case reported there was no history of trouble with previous pregnancies, the patient was perfectly healthy, and had already borne six living children.

Feeding Infants through a Catheter.—Kotzareff gives an illustration of the funnel and catheter with interposed tube, Murphy cock and glass cannula, which he uses to feed infants when conditions in nose, mouth or throat prevent normal feeding. He takes about ten or fifteen minutes to feed a very young infant in this way, imitating the drop method of proctoclysis.

MAMMARY CARCINOMA IN FEMALE OF THIRTY-FOUR: CASE REPORT.*

By Stuart Graves, Louisville.

The following case again emphasizes the necessity of physicians being on the lookout for carcinoma in young women. Two years ago I reported before this society a case of carcinoma of the cervix uteri in a woman twenty-one years old. In the present case the patient was not quite so young but considerably younger than the majority of women in whom carcinoma is supposed to occur, i.e., thirty four.

I was called to St. Anthony's Hospital by Dr. G. A. Hendon to make a pathological examination of a section taken from a mammary tumor which he suspected was due to chronic mastitis or at least a benign adenoma; the tumor had a duration of about eight months. Dr. Hendon had seen the patient only a short time previously and had advised operation.

For the purpose of being certain about the diagnosis it was decided to make a section of the tumor before determining whether a radical operation should be performed. He first removed the tumor through a small incision and partially closed the wound while waiting for the pathological report. When I finished the examination and advised radical operation he seemed surprised because of the age of the patient and the lack of previous symptoms of carcinoma. Radical operation was then performed. Subsequent microscopic examination of the lymph nodes removed showed extensive metastasis in the axillary glands.

Irrespective of the older teachings, I would urge that every tumor in the female breast be removed regardless of the age of the patient. In the majority of instances the patient may be treated with more hope of complete recovery if the diagnosis is verified by the examination of frozen sections taken at the operating table, the character and extent of the operation being based upon the prognosis suggested by the microscopic examination.

DISCUSSION:

H. H. Grant: Several years ago I reported before this society some of my experiences with malignant disease, the intent being merely to present the dark side of such cases as they ordinarily reach the surgeon's hands. Unfortunately many of them are seen so late that hopefulness as to ultimate cure is then practically nil.

What Dr. Graves has said is important, because we know he has had abundant opprtunity

*Clinical report before the Louisville Medico-Chirurgical Society.

of observing malignant disease from a pathological standpoint. His remarks emphasize what is becoming more and more the judgment of the surgeon, i.e., that all suspected malignant tumors, whether involving the breast or other structures, should be surgically removed at the earliest possible moment. This particularly applies to tumors in the situation he mentions because eighty-five per cent of them eventually become malignant if they are not actually so when the diagnosis of tumor is made. The mortality of such operations properly executed is slight, and even the mental relief afforded the patient more than compensates for any resulting deformity.

J. R. Morrison: Whenever I see a woman with a breast tumor I always try to impress her with the importance of having it promptly removed; and I believe careful microscopic examination should be made in every case before the operation is completed. That is the only way to be certain we are not overlooking malignant disease.

In this connection, I wish Dr. Graves would tell us whether an accurate diagnosis of malignancy can be made by the examination of a frozen section by a competent pathologist.

Stuart Graves: The accuracy of diagnosis by frozen section is in proportion to the number of specimens examined. With the patient under the anesthetic, with the surgeon waiting to determine whether the incision shall be closed or radical operation performed, with everybody watching the clock to see how long it takes to make the frozen section, usually only one or two blocks of tissue are examined. It is not always possible to make a positive diagnosis by frozen section under such circumstances; but if the pathologist has had sufficient experience to determine from the gross appearance of the tumor which is the most suspicious part, a frozen section or two of that portion of the tissue will enable him to make a fairly accurate estimate of the malignancy of the tumor. However, it is impossible for any pathologist to always make a positive diagnosis of malignancy from microscopic examination. The section may show tissue which in the judgment of the pathologist is extremely suspicious of malignancy, and in such cases I always give the patient the benefit of the doubt and advise the surgeon to perform radical operation. In doing this I try to make the situation clear to the surgeon and he must then assume the responsibility of deciding what shall be done. In breast tumors especially several blocks of tissue may have to be examined before a positive diagnosis can be made; but, all things considered, if the pathologist has had experience in examining suspicious tumors and selects the most suspicious portion, he can form an accurate estimate in ninety-five per cent of instances.

J. R. Morrison: If Dr. Graves will pardon another question, I would like to ask what he considers the pre-cancerous stage?

Stuart Graves: Many pathologists have variously described what they consider pre-cancerous lesions. For instance, MacCarty divided breast tumors into three classes: (a) primary epithelial hyperplasia (not carcinoma), (b) secondary epithelial hypertrophy (carcinoma?), and (c) tertiary or wandering hyperplasia (carcinoma). He says "the line of demarcation between the hyperplastic intra-acinic or intra-glandular epithelial changes and the extra-acinic or extra-glandular epithelial cells which are characteristic of carcinoma is not morphologically visible, the only difference being in the location of the cells. Intra-acinic or intra-glandular hyperplastic cells have been considered to be non-malignant, and extra-acinic an dextra-glandular hyperplastic epithelial cells to be malignant. * * The most closely related cytologic picture to carcinoma, is the intra-acinic or intra-glandular hyperplasia which has been termed secondary epithelial hyperplasia and that this picture is the histologic condition which should be called the precarcinomatous or pre-cancerous condition." On this basis the pre-cancerous stage would depend upon epithelial hyperplasia, i.e., abnormal growth and location of the epithelial cells. For instance, in tumors involving the glandular structure or ducts of the breast, if the epithelial cells be found growing abnormally in the glandular tissue or obstructing the lumina of the ducts, showing four of five distinct layers of large undifferentiated cells, the epithelial tissue has extended beyond normal limits and the tumor has become malignant.

Treatment.—Dr. Howard A. Kelly, Baltimore: It is very important to utilize the natural landmarks as well as an artificial division into hemispheres. Using the end of the speculum as a measure and these landmarks, the first step is to plot out all areas of disease and note them on a simple chart. Malignancy in bladder tumors is not always to be determined from the microscopic standpoint. Some tumors which are classified as malignant by the pathologist are clinically benign and vice versa. An ulcerated and infiltrated base is the clinical test of malignancy. The treatment is occasionally by excision, but, as a rule, by fulguration and radium. Many patients have apparently been cured, even those who have tumors which are malignant and infiltrative.

Dizziness with Insufficiency of the Aorta.—Heitz explains that the dizziness is not actual vertigo, but merely a sensation of emptiness or heaviness in the head which compels a person to sit down to avoid falling. It is evidently due to some disturbance in the circulation in the brain.

THE MIXING AND ADMINISTRATION OF ARSENICAL PREPARATIONS.*

By William J. Young, Louisville.

By virtue of the fact that so many physicians, both from cities and smaller towns in the State, have called at the syphilitic clinic in the Louisville Public Hospital desiring to learn how to mix and administer salvarsan, it occurred to me that it would not be out of place (or too bromidic) to compile an article giving the requisite information; with the additional hope that it may possess a few new suggestions for those already proficient, and also be an aid to those who are contemplating the use of the arsenical preparations.

The first thing the physician should learn is that properly administered under strict aseptic technique, there is very little danger in the intravenous use of salvarsan, the patient, of course, being previously prepared. Just what contraindications there are for salvarsan in those suffering from acute lues are unknown to me. If the patient has a cardiac lesion, and the supposition is that this lesion is caused by lues, or to pathology existing previous to luetic infection, I can see no reason why salvarsan should not be given, the size of the dose rather than the drug being restricted.

I am often consulted by some one as to the advisability of giving salvarsan to pregnant luetic women who have albumin in the urine, and invariably answer: I would give it beginning with small doses and watch the kidney function even with casts present. If the casts become more numerous, I would withhold administration until the kidney disturbance subsides or improves. This statement will also apply to the various diseases of the kidney. We know that the heart is taxed by the administration of salvarsan and that elimination is chiefly through the kidney; it is also true that luetic infection is more or less destructive to both these vital organs.

In chronic lues with complicating heart lesions, in Bright's disease, and various forms of anemia, more care and judgment are needed in the administration and dose of the arsenical preparations. In cardiac dilatation I have no hesitancy in giving salvarsan, beginning with small doses and striving to lessen the load on the heart by relieving engorgement of the circulatory system and thus enabling it to perform its legitimate part in the cycle.

The impression that salvarsan caused patients to become blind has been thoroughly exploded, and I only wish to mention the fact that so long as ocular syphilis is treated there will be cases of blindness after or even during the treatment, which in this enlightened age merely shows us the limitations of salvarsan rather than its influence as a causative agent in failing vision. We now know that salvarsan (or its equivalent) is the most dependable drug in the treatment of ocular lues, and its use in such cases is only limited by lack of improvement or untoward effects. I have given one patient with extreme iritis twenty-three doses of salvarsan at weekly intervals within twenty-two weeks with the end result of normal vision.

Essentials in the intravenous administration of salvarsan: In the intravenous administration of salvarsan the flexor surface of either arm is the usual place selected for insertion of the needle, owing to the fact that most frequently a prominent vein may be found in that locality. A ligature is applied and any vein which permits introduction of the needle may be used. I have been forced to use the external jugular a number of times where no other vein was palpable. A vein more distant from the heart would naturally be preferable, thus permitting the salvarsan to exert its effect on the heart more gradually. The needle is inserted through the skin along the vein to be punctured slightly to one side of the median line; this can be done with a single thrust; then the needle point is raised and brought over to the central line on top of the vein and inserted well into the venous canal. If the backward flow of blood is satisfactory the tubing with its connection is then attached to the needle and the solution is allowed to flow slowly into the vein. Where the vein is palpable but surrounded by a layer of fat, I insert the needle directly into the vein as this layer of fat prevents the vein from pressing downward and thus narrowing the lumen.

The two most important features for successful introduction of the needle into the vein are: (a) locating the best vein, and (b) a sharp needle. In locating the best vein a sense of touch has to be developed, as there are often arms with deep-seated veins easy to enter which may otherwise escape the closest observation. A tourniquet too tightly applied will, of course, simply "cut off" the entire circulation and not permit the vein to swell. In anemic patients with low blood pressure this is especially to be borne in mind.

Where veins on the flexor surface of the arm are small or obscured, one or more large veins may often be found on the extensor surface of the forearm. These veins are usually in loose tissue and roll about, thus demo :-

*Read before the Jefferson County Medical Society.

strating the necessity of having a sharp pointed needle. After a careful futile search over arms and legs, including hands and feet, the external jugular is next tried. This is located by compression made at the inner third above the clavicle, and often the vein will swell and be easy to enter. The needle, of course, is directed downward toward the heart. The importance of allowing the solution to flow slowly into the jugular vein cannot be too strongly advised, as it is easy to understand the proximity of this vein to the heart necessitates slower introduction than a vein at greater distance. If the operator searches carefully, bearing the foregoing points in mind, and is not satisfied with the finding of a fairly good vein, he will seldom have to resort to the external jugular. Oftentimes when the operator has transfixed or infiltrated a vein in one arm and turns his attention to the other, he is surprised to find a much easier vein to enter than the first. In such a case the only excuse the physician has for his faulty work is that he thought the needle could be inserted into the first vein; but he is certainly not giving his best attention to the patient.

A sharp pointed needle is a most important feature, and the "needle-men" whom I have seem do the best work always sharpen their own needles. The most common mistake in sharpening a needle for intravenous work is allowing the edges to remain sharp, thus giving it a knife-like edge on either side making it possible to split the vein after entrance of the point of the needle. If such a needle be not well introduced upward into the canal of the vein, there is apt to be "damming back" of the solution which causes immediate pain to the patient and subsequent infiltration with temporary obliteration of the vein. This is a very deceptive condition as there is practically no sign of infiltration at the time of injection. The patient complains of a burning sensation, and on reapplying the ligature there is a return flow of blood from the needle. When there is true infiltration the solution should be withheld at once, a tourniquet applied and an attempt made to "milk out" the infiltrated solution through the needle before removing it. It is nearly always excusable for one to have a small amount of infiltration, but this should be recognized at once and the patient is thus saved much pain and possible abscess formation. A dull needle is the cause of transfixing more veins than all other causes combined.

The tubing carrying the normal saline solution is applied to the needle and the saline allowed to flow into the vein followed by the salvarsan solution. If the vein selected is in such a position to permit the needle to rest on the arm without holding, this has always seemed preferable to me, and when possible I select such a vein. If the needle is well introduced into the vein there is no fear of its coming out, whereas when the operator has to hold the needle with his hand unless his eyes are kept constantly on it there is apt to be deviation of the point and the wall of the vein will be pierced with its annoying consequences. Even where the eye is fixed on the needle the natural tendency is for the operator to push the needle upward during the injection so that where only about one-third of the needle is engaged at the beginning when the operation is completed almost the entire shaft is through the skin.

When coupling the tubing to the needle after introduction, it is always important to have a clear view, that is the needle should not be covered by the hand which obscures the view and favors deviation. The necessity of following salvarsan solution with normal saline does not obtain if the tubing is disconnected and the needle allowed to remain in the vein for a few seconds, the salvarsan solution by that time having been taken into the blood.

The most approved method of giving intravenous salvarsan is by gravity. The syringe method during the last few years has had a wave of popularity and is still being used by those who are willing to persuade the patient to take the chances because of its convenience and simplicity. The advantages of the gravity over the syringe method is: (a) a larger dilution of the drug, and (b) a more gradual intake of the solution. If the syringe is used the tendency is to inject the solution within twenty seconds to one minute. It is impossible to gauge the time unless a watch is placed beside the operator or an assistant "calls time," and even then the injection will not be uniform. With the gravity apparatus one can regulate the flow so as to gauge the time according to the amount of the solution to be introduced. To insure the least toxic reaction the time in my work is fifteen minutes for a dose of 0.6 gram salvarsan, or 0.9 gram neosalvarsan; 20 c.c. of freshly distilled water to each 0.1 gram of the arsenical preparation injected is the dilution used; and where a smaller dose of salvarsan is given less time would naturally be consumed. In clinic work I use 10 c.c. to 0.1 gram of salvarsan owing to the number of cases to be treated and the limited time of the clinic. There have been no fatalities in over five thousand doses given during the last year, and I feel justified in continuing the method because of the number of patients it enables us to handle in our limited time.

An important feature in administering salvarsan is that the physician must be thoroughly familiar with the symptoms of any reaction which is likely to occur. By his manner of assurance in meeting emergencies the anxiety of the patient is instantly relieved, and this acts as a decided check on the reaction. A few well-directed questions by the operator to demonstrate his knowledge of what the patient is undergoing during an acute toxic reaction will allay his fears and nature will do the rest. I have seen cases where the real toxemia was mild, but owing to the patient's mental state from the fear of what might happen, it seemed like a severe reaction.

An acute reaction may occur anywhere from a few seconds to thirty minutes after the solution begins to flow into the vein. As a matter of fact, I have never seen an acute reaction twenty minutes after giving salvarsan, and thirty minutes is a liberal leeway. The patient's face becomes flushed, breathing labored, he complains of numbness of the arms and legs, the face, lips and tongue may become swollen, with at times a burning sensation of the palms of the hands and soles of the feet. These various symptoms may be mild or extreme, lasting from a few minutes to a couple of hours according to their severity. It is always well to have the patient remain in a recumbent position for twenty minutes after receiving the injection after which he is allowed to proceed to his home. The symptoms which may later arise are: nausea, chills, elevation of the temperature, headache, and tachycardia.

If the patient is instructed to take a laxative before going to bed the night previous, if breakfast is withheld and no food or water given for two to six hours after taking salvarsan, there is usually no nausea. The chills which may develop after one to three hours may vary in number and severity, followed by a rise of temperature which seldom reaches over 102 degrees F. If blankets and hot water bottles are applied at the outset the symptoms soon subside. The tachycardia is annoying and nervous patients become frightened, but on reassurance of the physician and application of an ice bag to the chest this soon disappears. The intense headaches usually occur in nervous individuals and may at times require codein sulphate hypodermatically, but aspirin will generally control them.

Another symptom which may occur is diarrhea which is of no consequence; in fact, if any of the foregoing symptoms persist for more than two hours, it is well to give the patient a cathartic. In the presence of acute symptoms the custom is to give the patient 10 to 15 m. of the adrenalin solution.

The outfit to administer salvarsan or its equivalents by gravity is as follows:

One 500 c.c. flask for boiling freshly distilled water; one glass stoppered container for mixing solution; one 250 c.c. gravity tube or container; one glass funnel for filtering solution; one 5-foot rubber tube with cut-out glass window 8 inches from end which connects with needle; one freshly prepared hydroxide solution 15 per cent.; one medicine dropper for dropping solution; two needles for intravenous work.

All glassware should be duplicated and kept at hand for use in case of an accident. It is a good plan to have two outfits sterilized at the same time so in case of any faulty technique, a part of the outfit to be used or in use becomes unsterilized, it may be immediately replaced. In preparing this outfit for salvarsan the glassware should be washed twice in soap and hot water, then rinsed in running water and again in distilled. Dry sterilization is to be preferred, in which case the articles are baked at 160 degrees C. for thirty minutes.

Should wet sterilization be convenient or necessary, distilled water should be used to prevent deposition of salts and dirt. Rubber tubing should be thoroughly rinsed in hot water before boiling and then cleansed with distilled water. Every article used in the mixing of salvarsan solution should be previously prepared with sterile distilled water,—even the hydroxide solution. The main point in mixing salvarsan and freshly distilled water is that the hands be not allowed to touch any part of the apparatus or connections that come into contact with the solution.

The hydroxide should be freshly prepared with sodium hydroxide sticks free from sodium carbonate and sodium bicarbonate which form if the sticks are exposed to the air. The reason for insisting upon freshly prepared hydroxide solution is that otherwise the solution undergoes some unknown (at least to me) chemical change, and there is a precipitate at the bottom of the bottle which should certainly be filtered if the solution is to be used. As this is an unknown chemical reaction I prefer a fresh solution if only to ease my own mind should any accident occur.

The salvarsan ampoules are placed in a dish of Hg. Cl_2 solution or alcohol to ascertain whether they are air tight, and any found defective are discarded. In using salvarsan, neosalvarsan, diarsenol or neodiarsenol, if water at body temperature is used, the preparation goes readily into solution. With arsenobenzol from the Dermatological Research Laboratory, to convert the mixture into solution boiling water is necessary, and it is also im-

portant to reduce all larger particles to powder before adding the water.

After placing the stopper in the mixing tube a piece of sterile gauze is placed over it large enough to extend downward over the rim of the container, so that in shaking the mixture the hand does not come into contact with the rim and unsterilize the solution on being poured from the mixer. After a few shakes of the container the stopper should be released and any gas or heated air permitted to escape, otherwise, as I have known and personally experienced, the pressure from within may be great enough to cause the mixer to burst and cover the operator doing the mixing with hot solution.

It is well to neutralize the preparations requiring it with 5 c.c. to 0.1 gram, and after neutralization to raise the solution to the desired dilution by adding freshly distilled water, thereby lessening any slight variation of neutralization. The solution is then allowed to cool until it reaches body heat. By using hot solutions harm may be done the vein and unnecessary pain caused the patient.

Any garment causing the least constriction about the arm should be removed before applying the ligature. The solution is always strained through wet gauze before it goes into the gravity tube. The gauze is wet by passing freshly distilled water through it to prevent any particles of cotton lint from being washed into the solution.

Of the different arsenical preparations on the market, I may say they are all efficient and if properly administered toxic effects are the exception. The consensus of opinion is that the preparations requiring neutralization are superior to those where that is unnecessary; in other words, the various forms of salvarsan. Personally I prefer the arsenobenzol of the Dermatological Research Laboratory, Philadelphia, and believe it is the least toxic of the different arsenical preparations. The objection to its use is a personal one, i.e., it is difficult to get into solution unless bubbling, boiling water is used in mixing, then one experienced in mixing will convert it into solution within one or two minutes.

In doing Public Health work I was at various times furnished all the different salvarsans with the exception of Billion, and as a supply of that was kept at the Louisville Public Hospital, I had a fair opportunity to test them all, including the original.

Tablet Unveiled.—Appropriate exercises at the unveiling of the memorial tablet to the late Dr. Charles O. Zahner, professor of physiology in the University of Louisville, took place in the college building, June 26.

BLUE CORNEA: CONTINUED REPORT: BILATERAL DEFORMITY OF LOWER EYELIDS: CARCINOMA OF SUPERIOR MAXILLARY BONE: CASE REPORTS.*

By Samuel G. Dabney, Louisville.

At the last meeting of this society I mentioned the case of a child aged two months born with blue cornea. It may be of interest to state that the blueness has completely disappeared from one eye and almost entirely from the other. The opacity of the cornea was central and probably reduced the vision to a perception of light, but of this we could not be certain on account of the age of the child. The majority of text books on the eye attribute blue cornea to contusion or pressure during forceps delivery. In the case reported, however, the child was not instrumentally delivered.

It so happens that since the last meeting I have seen another congenital condition which is very rare. A child six months old was brought to me from Indiana in whom the eye lashes of each lower lid were turned completely inward on the eyeball. It is the only case of the kind that I have ever seen. It was necessary to operate immediately because irritation of the inverted eyelashes had caused chronic conjunctivitis which if left alone would have produced corneal opacity. I simply removed a small elliptical segment of skin and lower palpebral muscle and after suturing the edges together the child was completely relieved.

I want to mention a case of cancer which may be of some interest. About a year ago a man in the sixties consulted me because of a swelling which involved the left side of his face. He complained of great pain, there was considerable swelling over the left cheek, and he had some discharge from the left nostril. His teeth, I may say, had been carefully examined and no disease found. Internally the nostril presented no evidence of a tumor; externally there was merely this swelling over the cheek bone.

Examination through the nose after irrigation indicated that the patient had chronic suppuration of the antrum of Highmore, and after making a free opening from the nose into the antrum underneath the turbinal bone considerable relief was secured. I told him I was a little uncertain about the diagnosis and suggested that he consult someone else, but

*Clinical report before the Louisville Medico-Chirurgical Society.

he insisted that I continue to treat him. I explained to the patient that in my opinion there were three possibilities: (1) a phlegmonous inflammation due to infection from the antrum of Highmore, (2) syphilis, and (3) cancer.

The swelling increased despite cleansing the antrum by irrigations. No polyp or tumor was found in the antrum which was curretted and only a small amount of grumous material removed. A Wassermann was made and was flatly negative. Incisions were then made in the gum and the cheek bone but nothing was evacuated. I again suggested that the patient consult another physician but he still urged me to continue treating him. However, I insisted that a general surgeon be consulted and he selected Dr. Louis Frank. I saw the patient with Dr. Frank and a roentgenographic plate was made which showed only the presence of a mass in the cheek. Dr. Frank believed there was a phlegmonous inflammation with pus and that my incisions were too superficial to reach it. At his suggestion a deeper incision was made through the gum and another in the cheek under the orbit but no pus was found. We did remove, however, with the curette a soft grumous mass from the bone about as large as the end of my thumb which looked to me very much like cancer.

I then telephoned Dr. Stuart Graves asking if he would come to St. Joseph's Infirmary and make a microscopic examination of this grumous mass which he did very promptly and gave a positive opinion that the patient had cancer. The man wanted to know the result of the pathological examination and was informed that Dr. Graves had made the diagnosis of cancer. I told him that he must see the general surgeon again that night so that if any further operative measures were deemed advisable they could be undertaken immediately. Dr. Frank saw him a few hours later, and with the evidence then before us, agreed in the diagnosis of inoperable cancer. After being informed that the case was considered inoperable the patient simply requested that he be given sufficient morphine to keep him comfortable. This was arranged and he was given at first 1-8 grain which was to be gradually increased as might be required.

The patient went home in about a week at which time the swelling had markedly increased; it extended into the nose and downward into the mouth; it extended to the orbit and pushed the eye upward. Several minute openings later appeared on the skin surface which discharged a small quantity of grumous material. It seemed certain that he had a rapidly growing cancer which would soon terminate fatally by extension. His condition remained about the same for several months and he then began to show some improvement. I might add that Dr. Graves made a blood Wassermann test which was negative, but notwithstanding this large doses of potassium iodide were administered without any beneficial effect whatever. This was several months before the improvement began.

The patient has improved wonderfully within the last few months, and I understand has been treated at one of the X-ray laboratories in the city. The swelling has disappeared and there is now merely a small hard lump in the cheek. He complains of very little pain and has resumed his business. I do not know to what extent he has become addicted to the use of morphine or whether he is still taking it. I have not seen him professionally for several months.

It has now been over a year since the diagnosis of cancer was made, and I thought then that death would occur within two or three months. He now has no evidence of the tumor excepting the small hard lump in his cheek already mentioned.

I have been impressed with the fact that if this is cancer the course has been very unusual. I am not prepared to say that Dr. Graves made a mistake in his diagnosis; probably this man did have a cancer of the cheek; but after the interval of a year considering his present condition I am frank to say that I do not know what was the matter with the patient. I can hardly see how a phlegmonous inflammation could have extended to the orbit and into the mouth and nose. I report it as perhaps a case of cancer of the superior maxillary bone, basing that opinion upon the microscopic examination and the fact that the man cannot be considered well. It may have been attended with a great deal of surrounding inflammation which has gradually subsided.

The Wassermann examination was negative, the patient had no history of syphilis, and there have been no symptoms indicative of that disease at any time, and large doses of iodide made no improvement. From a clinical standpoint the tumor did not resemble a gumma; moreover, he was given medication which would have caused the gumma to disappear and no appreciable effect was noted.

DISCUSSION:

B. C. Frazier: I believe the diagnosis of cancer in the case reported by Dr. Dabney was correct. We know it is not unusual for patients with malignant disease to live longer than a year; I have seen a great many such cases. This man

will no doubt eventually die from extension of the disease.

H. H. Grant: Possibly in the case reported by Dr. Dabney there was an inflammation surrounding malignant disease as he has described. It is a very unusual thing, however, for carcinoma to be held in abeyance under any circumstances. Sarcoma not infrequently pursues the course he has described, but as Dr. Graves made the diagnosis of carcinoma that would seem to exclude sarcoma.

The history appears to me very decidedly like syphilis, and I think Dr. Dabney's method of excluding that disease is not sufficient. The appearance of a grumous discharge is by no means a guide as to the character of a lesion which produces it. While it is well known that syphilis may improve without medication and that the disease usually yields much more readily to medication than happened in this case, yet it would seem to me that despite the positive opinion of Dr. Graves the lesion is more likely syphilitic than cancerous. This, of course, is largely guess work; and while Dr. Graves may feel sure from his pathologic examination that the patient has cancer, I am inclined to think it was probably syphilis, particularly as we know the microscope is not always absolutely reliable and in the best hands may occasionally mislead both the pathologist and the surgeon. The course of carcinoma of the bones of the face is usually very rapid, especially where the antrum is involved; and as the disease has been held in abeyance for a year I am led to believe there was possibly an error in the diagnosis.

Stuart Graves: No one is infallible; anyone who pretends to be is not honest nor is he to be trusted. I may have been mistaken in the diagnosis in the case reported. I remember making the Wassermann test and also the microscopic examination of the specimen of tissue. However, I am not sure that I made a diagnosis of carcinoma in this case; I think my diagnosis was a "malignant growth;" and there is quite a difference between the diagnosis of carcinoma and of a malignant growth, particularly in this location.

I remember a similar case where the diagnosis was between syphilis and malignancy in which a pathologist whose opinion I respect highly made a mistake. His diagnosis was epidermoid carcinoma, and it was later determined that the patient had syphilis. He had just what I had in this case, i.e., a specimen from the surface of the tumor for examination which showed under the microscope a rapidly infiltrating cellular growth apparently malignant.

To be certain of a malignant tumor we must have not only a rapid growth of undifferentiated cells but also infiltration and possibly metastasis. In such an examination as was made in the case reported we know nothing about the possibility of metastasis and we cannot be positive about any infiltration. We simply have to do the best we can in estimating the rapidity of the growth of undifferentiated or atypical cells.

In this connection I recall two other cases which may be of some interest. One was a young woman who had what was supposed to be inflammatory disease involving the antrum of Highmore similar to the case Dr. Dabney has reported. A specimen of tissue was sent to the laboratory with a very brief clinical history and I made the diagnosis of malignancy. When my report reached the ward one of the older men on the staff was very much surprised and questioned the accuracy of the diagnosis. He said he could not believe it was malignancy and thought it was syphilis, his reasons being that the woman was too young to have malignant disease, that she was supposed to have syphilis and that the Wassermann had been positive. Two Wassermann tests were later made at the hospital and both were negative, and while, of course, this did not positively exclude syphilis, no reason for suspecting the disease was disclosed by careful questioning of the patient. The specimen was reexamined and the diagnosis was verified. I examined the patient carefully and succeeded in finding a small lymph node under the ramus of the jaw and another in front of the ear. A surgeon removed these and microscopic examination demonstrated typical epithelial metastasis which made the diagnosis positive.

The other patient was a woman of thirty-two who was suspected of having only a chronic bone inflammation. The patient is now in the hospital under treatment. Several of the sections examined show indications of a malignant growth, but I am uncertain whether it is an alveolar sarcoma or an epithelioma in which the cells have assumed a spindle shape. I am inclined to think it is a sarcoma although it has not grown very rapidly; sarcomata involving the bone generally grow rapidly.

S. G. Dabney, (closing): The discussion has been most interesting. I am sure Dr. Grant misunderstood me. I did not exclude syphilis, but said it did not look like syphilis to me, that the tumor did not resemble a gumma clinically, and there had been no symptoms of syphilis. I am aware that laboratory examinations cannot always be relied upon in making the diagnosis. Someone has tritely remarked "do not swear at the laboratory man, and do not swear by him."

The Wassermann test is undoubtedly of immense value, although mistakes are not impossible by those who make such examinations. I regard the Wassermann of least value in latent syphilis, but if a man in the condition I have described had syphilis a negative Wassermann would certainly be rare. I may say in this connection that probably the eye, ear and throat men see more syphilis than anyone excepting the gen-

ito-urinary specialists; that is syphilis and its results.

I wish to call especial attention to this point. Is Dr. Grant right in stating that a gumma will disappear spontaneously? I have never heard of such a thing and if it is true I must rearrange all my ideas about syphilis. Secondary symptoms frequently subside; mucous patches come and go; syphilitic eruptions disappear of themselves; syphilitic iritis yield to atropine; but I have never known a gumma to disappear without treatment. In the case reported the mass did not change nor did the patient improve under large doses of potassium iodide.

In my opinion the treatment of syphilis in any stage means the administration of mercury, the iodides, and salvarsan. One of the most marvelous things in medical practice is the way a gumma will melt away under iodide of potassium, but this patient received large doses without any effect whatever. Months after he ceased taking medicine he began to improve.

It is quite probable that this patient had a malignant growth which was surrounded by a large amount of inflammatory material and that the latter has gradually disappeared. I do not believe Dr. Grant is correct in saying that a gumma would disappear without treatment. The case seemed to me of some interest although the diagnosis is yet doubtful.

THE DOCTOR'S SADDLE BAG.*

By E. W. Ford, Hartford.

This paper deals with the Armamentarium of the general practitioner, while making his ordinary visits and obstetrical work. The outfit will be found rather more troublesome to carry horseback, than the old fashioned saddle bag, but short distances afoot or in any ordinary vehicle, will be more convenient to transport. Formerly it was necessary for the physician to carry his supply of medicines, due to the scarcity of drug stores, but now the stores are plentiful and by prescribing, the patient gets the first choice of remedy, rather than the second or third choice of the dispensing doctor. So, the drugs one should carry are few and only for immediate relief.

First, one should have a good leather case of suitable size and color, furnished with one inside pocket, on one side and a loop upon the other, the latter to contain a bottle pad, holding a battery of six ground glass stoppered bottle with screw cap, each bottle holding from one to two ounces, to be filled with the following: Chloroform, tr. iodine, aromatic spts. ammonia, sol, nitrate of silver, 5 to 10 per cent, and alcohol. This leaves one extra to be filled with Monsell's solution or powder, carbolic acid, plain collodion or other choice of the owner. Besides these a small pocket case containing calomel tablets, alone or in combination, cathartic pills, tablets for local anesthesia, migraine tablets, etc., will be enough besides his hypodermic case with the usual assortments of morphine, apomorphine, strychnin, glonoin, atropin, pilocarpin, etc., these cases, with pocket case of instruments should be carried in the bag. You will need a soft rubber catheter, small package of absorbent cotton, one yard packages of gauze, 1 or more bandages and 1 or more threaded with plain or chromacized catgut in glass tube, small spool of Z. O. adhesive plaster, ear speculum, head mirror, 5 to 10 c.c. G. G. syringes, wooden applicators. This will meet the ordinary needs, as the average home has or can get mag. sulp., hot water bag, fountain syringe, quinine, turpentine, etc.

As further aids in diagnosis, one should carry in this bag thermometer, stethoscope, haemoglobin scale (Tallqvist), blood pressure apparatus, test tube for examination of urine and Russo's test, in season, also some of the following containers from the laboratory: for typhoid, malaria, and diphtheria and an empty bottle for urine.

This will about cover the daily needs of the average physician, many other things he will likely carry in his pockets of which, fountain pen, pocket knife, day book, watch and his own prescription blanks are the most important and when answering a hurry call you will find nearly everything already in the bag, except tooth forceps.

Obstetrical bag should contain similar pad of bottles, containing creolin, green soap, spirits of camphor, fluid extract ergot, chloroform, etc., besides nail brush, forceps, plain and carbolized vaseline, scales, scissors, umbilical ligatures, perineal needles and ligatures, nitrate of silver, solution 1 to 2 per cent, straps for patient, soft catheter, fountain syringe, rubber gloves, report blanks and receipt book.

*Read before the Ohio County Medical Society.

Acute Pancreatitis. Bloodgood adds two cases to nine others seen by him during the past twenty-five years. He is convinced that drainage of the lesser peritoneal cavity through the gastrocolic omentum meets the indications more than any other suggested treatment. The best method of examining the pancreas, if one does not wish to go through the gastrocolic omentum and fat without more evident signs, is to withdraw the omentum and colon and inspect and palpate the pancreas through the mesocolon.

CHRONIC INTESTINAL INDIGESTION IN CHILDREN.*

By Gavin Fulton, Louisville

Chronic intestinal indigestion in children is the expression of the end-product of injury or insult experienced by the digestive apparatus at some time in the past. This injury may have been comparatively recent, or may date from early infancy. Etiologically it may be the result of some exhausting or infections diseases; but by far the greatest number of cases can be traced to some food injury suffered during the first ten months of life.

It is of daily occurrence to see children ranging in age between three and seven years who present many signs of a functional disturbance of this type. Careful questioning of the mother discloses nothing as a causal factor more recent than the feeding history of the first nutrition period of infancy.

These patients, the majority of whom have been fed on cow's milk mixtures or proprietary foods, have apparently been normal in their growth and development prior to the fifteenth or eighteenth month. At about this time they show a gradually increasing group of symptoms which finally become so insistent that the parents feel constrained to seek the advice of the pediatrist.

Upon examination one readily discovers all the signs of inhibition or impairment of gastro-intestinal functionation with its resulting malnutrition in a greater or lesser degree. There is a secondary anemia with a rapid and sometimes irregular pulse; the skin is pale and dry; the cervical, inguinal and sometimes the axillary glands are plainly palpable; the stomach is dilated and often pushed upward high in the epigastrium; the colon is sagging and distended; the liver slightly enlarged and tender. In most instances there is obstinate constipation, and the alvine dejections are white and crumbly, indicating hepatic insufficiency. Enuresis is also very common. The musculature of the body is flabby and toneless. The patient is irritable and easily fatigued, yet at the same time possessed of a boundless energy and a desire for perpetual motion. The appetite is poor and most unreasonable in its tendencies. The patient is very restless and grits the teeth during sleep, and has a very foul breath especially upon awakening. Indeed it is these latter symptoms (because she thinks the child has worms) which most often influences the mother to seek medical advice.

You are all familiar with the foregoing symptom group, and my only excuse for attempting to refresh your memory lies in the fact that I desire to emphasize two points: First, that because of their lowered resistance these children are more susceptible to all forms of disease; and, second, because of the recurring abatement of the symptoms they as a rule receive very inadequate or what is worse very unwise treatment.

In regard to the increased susceptibility to disease: The atony and ptosis of the colon, which is the prime factor in the constipation, renders the patient more liable to attacks of appendicitis because of the presence of an enterolith or a circulatory disturbance from the pressure of an impaction. The kidney also bears the brunt of the intestinal toxemia in the form of a toxic pyelitis, and the fact that the urine so often contains indican and acetone indicates a reason for the recurrence of stubborn attacks of acidosis. The long impaired intestinal secretion and slow movement of the intestinal contents because of enfeeble peristalsis favor the development of the ova of intestinal parasites, particularly the ascaris lumbricoides and oxyuris vermicularis.

Owing to the disturbance of the lymphatic system more than fifty per cent of these patients have adenoids and diseased tonsils, and I believe the failure to obtain the expected beneficial results from certain tonsillectomies is due to the fact that no post-operative treatment of the underlying intestinal indigestion was instituted. And, finally, the systemic manifestations of any focal infection are more marked in these patients than in children who are otherwise normal. Especially is this true in regard to the nervous system, tic, habit spasm, and even severe chorea being observed in many cases.

The treatment is symptomatic,—dietetic, hygienic and last but not least, medicinal. It is obvious that appropriate surgical procedures, such as the removal of teeth, tonsils or appendix, where indicated, should precede any organized plan of treatment. This being accomplished, and the intestine purged of parasites, a definite routine of diet, rest and exercise should be established.

These patients should have four meals a day at regular intervals, and it should be a rule that where one meal is refused nothing is allowed until the next one is due. The food should be rich in protein,—fruits and vegetable salts. The carbohydrates must be reduced to the minimum of safety, and the necessary heat units derived from the fats. Fresh bread should be excluded from the diet, toast and dried beaten biscuit only being allowed.

My own routine of diet is as follows: Breakfast at 7:00 to 7:30 A. M., consisting of

*Read before the Louisville Medico-Chirurgical Society.

fresh fruits in season; bacon, eggs, toast with cream or milk. Lunch at 10:30 of milk, cold beaten biscuit with butter and a little honey or brown sugar. Dinner at 1:30 P. M. of boiled or roast meat (with fish substituted at least once a week), sparingly of one article of starchy food, a generous helping each of two gree vegetables. Supper at 6:00 P. M. of cereal, toast and milk. This last is the lightest meal of the day and serves only as a "hold over" until breakfast. In this way the impaired digestive apparatus is allowed a longer period of rest and the intestine is much freer of gas, thus permitting the patient a quieter and more restful sleep.

The patient should be kept in the open air as much as possible and be encouraged in moderate, pleasant exercise morning and afternoon, with a period of one hour recumbent rest after the mid-day meal. Fatigue should be avoided, and amusements of an exciting nature must be prohibited.

A neutralized enema of sodium bicarbonate (1-2 ounce to the quart) should be given every night for ten days, and thereafter twice a week over a long period. Aromatic cascara combined with hydrastis given before meals will stimulate the circular fibres of the intestine and the intestinal mucosa. Rotary massage of the abdomen for a few minutes night and morning will increase the tonicity of the abdominal wall and tend to lessen the constipation which is one of the most distressing features.

As a tonic and alterative I have obtained the best results from sodium cacodylate. This I give hypodermatically once a day in doses ranging from 3-4 to 2 grams. The various preparations of iron, hydrochloric acid, and bitter tonics, are of more or less value, but have not been so satisfatory in my hands as the other drugs mentioned.

CONCLUSIONS.

Chronic intestinal indigestion is the end result of a definite injury to the digestive apparatus which inhibits its functionation, but which produces no specific lesion of the adjacent tissues.

It is often the underlying factor in disease of the throat, the nose, the abdomen, and also in certain neuroses.

It is amenable to a definite line of treatment only after such complications as mentioned in the foregoing paper have been removed.

DISCUSSION:

J. Rowan Morrison: In the majority of instances chronic intestinal indigestion in children is due to food injury in early life. In my experience the overfat child is most prone to develop intestinal indigestion. The child may be normal for the first few months of life then develop intestinal indigestion which often becomes chronic.

During the first two years the average child is over-fed with milk, cream, cereals, etc., and I believe these are often factors in the production of indigestion. The young child should be given less milk and more properly cooked green vegetables. Among certain classes of people we know that children for the first three years of life are given little food with the exception of milk and bread. Such children are usually pot-bellied, they have a persistent sour stomach, offensive breath, they suffer from frequent bellyaches and have adenoids.

Green vegetables may be given children with advantage before they are a year old, as may also orange juice and beef juice. The vegetable calcium salts are useful in promoting bone formation and also in development of the nervous elements. I recall that a member of this society severely criticised a nurse for feeding a baby on string beans, cabbage and spinach. These articles had been properly prepared by being passed through a sieve, and of course were beneficial to the child especially on account of the calcium salts which they contained.

The essayist did not discuss intestinal troubles due to congenital deformities, such as descent of the transverse colon, ascent of the sigmoid flexures, etc. I have seen many children where the X-ray demonstrated such deformities. Of course there was no food injury, therefore further discussion would be inappropriate.

Dr. Fulton outlined a type of chronic intestinal indigestion noted in young children with few symptoms. The child is irritable, restless, grits the teeth during sleep, etc., and the mother usually considers the trouble due to intestinal worms. While these patients undoubtedly harbor the ova of worms, particularly round and seat worms, I have seen a number of instances where the "seat worms were not in the seat," they had to be "washed down from above." Such worms often cause considerable intestinal irritation as shown by the presence of mucus in the dejecta.

In regard to the question of acidosis: We know that acidosis may mean much or little. If the patient has acute acidosis as demonstrated by reduction of the alkaline reserve in the blood it may be a very serious thing; but the mere finding of acetone in the urine does not always mean acidosis. At one time everybody seemed so much afraid of acidosis that the finding of acetone in the urine was quite alarming. We now know that the mere finding of acetone in the urine does not necessarily mean that the patient is in a dangerous condition. The acetone promptly disappears after cleansing of the **primae viae** and the administration of alkalies.

So far as the treatment of chronic intestinal

indigestion in children is concerned, Dr. Fulton has fully covered the subject. Milk should not be given if it does harm. Green vegetables and fruits are indicated. I am in the habit of restricting the fats as I believe too much fat plays an important role in the production of digestive troubles in infancy. Cascara may be given before or after meals, and soda enemata are useful. The child should be kept out of doors as much as possible in suitable weather, but rest is important after each meal.

These children fatigue easily, their resistance is lowered, and adenoids and diseased tonsils are noted more frequently in this class than in normal children. Removal of adenoids and tonsils, circumcision or other minor surgical procedures are insufficient in many cases, we must regulate the diet, the child must be rationally fed, with reduction of the carbohydrates and increase of the proteins. Potatoes and gravy are frequent causes of digestive disturbances in young children. Potato starch is difficult for the child to digest.

B. C. Frazier: I am inclined to be a little old-fashioned. I believe milk is good food for both children and adults. Children should be fed on milk almost exclusively until they are two years old. Vegetables, such as cabbage, turnips, spinach, carrots, etc., are all right after the child has a few teeth and can chew his food properly before swallowing. It has been my observation that children thrive better on a milk diet than anything else. I am a milk advocate "first, last and all the time."

Louis Frank: I agree with Dr. Morrison that the presence of acetone, that is acetonuria, does not always mean acidosis. It has been my experience that about fifty per cent of the patients who come to operation for various types of pathology have acetone in the urine,—but they do not all have acidosis.

I. A. Lederman: With reference to the relationship between adenoids and enlarged tonsils and chronic intestinal indigestion in children: It is a fact that throat specialists have very frequently noted this combination. It is also true that in a great many instances the tonsils and adenoids should be promptly removed, but this should not be made a routine procedure.

Adenoids and enlarged tonsils are often an expression of lowered resistance and do not necessarily play any part in focal infections. Of course where adenoids or tonsils are demonstrated to be the foci of infection, where they are producing well-defined evidences of disease, there is no question that they should be removed promptly. However, I am sure many of these patients, if they are taken in hand by the general practitioner, will get well without removal of adenoids and tonsils which at the time seemed to play a part in the pathology. At any rate, I am a firm believer in first preparing the child for operation by giving him the benefit of general treatment to make him a better surgical risk, otherwise we may be disappointed in the ultimate results. It is also true that post-operative general treatment is essential. My plan is to urge the general practitioner to get the patient in normal physical condition and thus try to avoid removal of tonsils and adenoids, excepting where for good reasons the tonsils and adenoids must be removed promptly.

A point not mentioned by Dr. Fulton is the frequency with which middle ear suppuration is seen in the type of children he described. Exactly what causes this middle ear suppuration we are uncertain, and our text books on otology hardly mention the subject; but in our daily work we see such cases quite frequently and have been inclined to attribute them to two causes, viz., First, lowered resistance from the gastro-enteric disturbance and, second, infection from the naso-pharynx. However, we see many cases without apparent infection of the naso-pharynx, without enlargement of the adenoid tissue, and without definitely diseased tonsils; yet the patient has sub-acute or chronic middle ear suppuration (without actual destruction of tissue) persisting over a long period of time, the suppuration not subsiding until the child's general condition has been brought to par. We also find here an indication for the removal of adenoids and enlarged tonsils when present. The frequency with which we see middle ear suppuration in the type of children described by Dr. Fulton suggests that the ear affection is dependent upon the patient's general condition. I may add that the child eventually recovers without ill-effect upon the ear as a functionating organ; that is, the drum membrane heals and the child recovers with a normally functionating ear mechanism.

Cuthbert Thompson: It has sometimes been a question with me whether all these so-called intestinal indigestions in children were due to dietetic errors. I think it would be well not to call a case "chronic intestinal indigestion" until all organic and reflex causes have been excluded.

While in most cases the attacks of indigestion may be due to improper feeding, we should be careful not to overlook other causes before making the diagnosis.

F. C. Simpson: I disagree with Dr. Thompson in regard to chronic intestinal indigestion being due to reflex causes. In the class of cases mentoned by Dr. Fulton the illness develops gradually, whereas reflex troubles always arise suddenly. My observation has been that in many cases there is a persistent diarrhea instead of constipation.

I think the only way we can successfully handle these cases of intestinal indigestion in chil-

dren is by regulating the diet, as the majority of them are due to some dietetic error. Proteins and fats have just as much to do with causation as carbohydrates. We have to experiment with these children and ascertain what is suitable for them. I believe in giving them milk and green vegetables, but too much protein and fat may be harmful. These little patients are sometimes difficult to manage, and we have to place them in the hands of a trained nurse who will follow our instructions.

A. O. Pfingst: There is one affection that comes under the observation of the oculist which is largely dependent upon the general condition portrayed by the essayist, viz.: phlyctenular disease, so common during the first few years of life. These cases are evidently dependent more upon intestinal disturbances than anything else, notwithstanding the recent theory that local infection from the ethmoid, the tonsils and various other parts of the body have been held responsible for the condition.

It may be interesting in this connection to mention a series of cases successfully treated by internal medication alone while I was interne in one of the New York hospitals. No local applications were used, the treatment being largely hygienic and dietetic along with treatment of the alimentary tract. These children responded to general measures more rapidly than did others where local treatment to the eye was employed without constitutional treatment.

J. E. Hays: I agree with what Dr. Simpson has said. After you have determined the character of food required, you can handle cases of acute or chronic intestinal digestion successfully by dietetic treatment. The trouble is largely due to faulty dietary.

The essayist is correct in recommending an increased amount of protein whether the patient be a child or an adult. However, the protein should not be increased beyond reasonable limits otherwise it may cause trouble. I agree with those who have spoken in favor of the reduction of fats and carbohydrates and the giving of green vegetables in addition to milk and the cereals.

S. G. Dabney: It has always seemed to me doubtful, among older people at least, whether any of the iron clad dietary rules will hold good. Of course there are exceptions to all rules, and in dietetics the exceptions may be more numerous than in other instances. The axiom that a particular article of food may be "one man's meat and another man's poison" is certainly true in adult life.

Dr. Pfingst has "stolen my chief thunder." If there is one disease of the eye which may be correctly attributed to intestinal disturbance it is phlyctenular ophthalmia, although there is a doubtful theory to-day that it is a form of localized tubercular infection. When I was a medical student I was taught that the first thing to do in acute phlyctenular inflammation of the eye was to "give the child a dose of calomel, keep the bowels open and regulate the diet." If I were asked to name the eye disease most closely associated with intestinal disturbances I would say phlyctenular inflammation. The majority of these children are in the habit of eating candy and other sweets at irregular hours. I think all sweets, as well as tea, coffee, pastry, etc., should be excluded from the dietary. Acute phlyctenular inflammation may sometimes be relieved by internal treatment alone as stated by Dr. Pfingst.

Several other eye affections have been attributed to intestinal disturbances, but outside of phlyctenular inflammation the relationship does not seem to have been sufficiently well established. DeSchweinitz and others have attributed inflammations of the middle coat of the eye, the so-called uveal tunic, to chronic intestinal disturbances.

I was especially interested in Dr. Lederman's remarks about improving the general condition of the child before operating for adenoids and enlarged tonsils. When a child is brought to me with sufficient enlargement of the lymphoid tissue in the naso-pharynx to produce symptoms, I am in the habit of operating immediately unless the patient has some acute disease which would constitute a definite contra-indication. If the child has ordinary health I do not wait for improvement, and I believe this is the common practice among specialists. I have not followed Dr. Lederman's plan of returning the child to the family physician for treatment of the chronic intestinal condition first. I believe removal of adenoids and diseased tonsils ought not to be deferred if the child is in physical condition to withstand the operation. The intestinal disturbance usually improves after the adenoids and tonsils are removed, and I am in the habit of operating first and then returning the child to the general practitioner for further treatment.

J. Rowan Morrison: Before the essayist closes the discussion I would like to say a few words in regard to middle ear suppuration in young children: I spent the greater portion of one summer in the dead room at Bellevue Hospital, New York. In every instance where a child died of marasmus the middle ear and mastoid were opened and examined, pus being found in practically every case. This was attributed to the fact that the marasmic child did not have strength enough to keep its mouth closed, the buccal secretions became infected which in turn infected the middle ear through the Eustachian tubes.

I have often seen children with eczema apparently due to excessive intake of fat, and presume Dr. Fulton has had similar experiences. When we excluded fat from the diet and gave the

children skimmed milk, they soon recovered. I believe we should give more proteins and restrict the sugars and fats in the treatment of intestinal indigestion of children.

Gavin Fulton, (closing): I am obliged to the gentlemen for their varied and contradictory discussion. Dr. Morrison's criticism seems most pertinent in regard to my ill-advised use of the term acidosis. I did not intend to use this word in its strictest sense but as a descriptive term for acid fermentation. A child of the type I described has an attack of vomiting which persists for thirty-six to forty-eight hours, he is very ill, becomes cyanotic, with chills followed by temperature of 102 degrees F., and remains in a state of profound collapse for five or six days. I have in mind a girl of twelve years who, prior to coming under my observation, had been treated by prominent practitioners in other cities under various diagnoses. Three or four times a year she has had an attack of intestinal indigestion and on several occasions it appeared that she would not recover. During these attacks her urine is filled with acetone. I know of no better descriptive term for this condition than acidosis or acid fermentation, and this is the sense in which the word was used in my paper.

Referring to Dr. Frazier's remarks: I cannot agree that milk should be the exclusive diet of children until they are two years old. Based upon present-day knowledge the average baby after the age of ten month is far better off with a little calcium salts in the food than without this agent. The necessary calcium is supplied by the use of properly cooked green vegetables.

In the type of cases mentioned in my paper the cause of the disturbance is food injury not congenital deformity. The greatest amount of food injury undoubtedly occurs during the early months of life from over-feeding at too frequent intervals.

The most of you are probably familiar with the work which is being done at Johns-Hopkins Hospital and Rockefeller Institute with reference to the effects produced by the lack of calcium salts in the blood serum. However, the principal is not new to us, we have used the method of feeding described in our clinics here for quite a while. In addition to milk we give the child properly cooked green vegetables, the latter containing three essential elements: (a) water, (b) calcium salts, and (c) a non-irritating residue.

The advice given by Dr. Lederman is calculated to give the family physician considerable worry. A child with adenoids and enlarged tonsils, and who also suffers from intestinal indigestion, does not always die but he is a constant source of anxiety to the mother and the family doctor. The child is restless day and night, he cannot sleep and requires constant care. According to the views expressed by Dr. Lederman and some of the other specialists: "This is the family doctor's trouble, let him get along with it the best way he can; return the child to him to be improved physically, then we will do whatever nose or throat surgery may be necessary." My rule is to have the adenoids and enlarged tonsils removed before attempting routine treatment for the relief of the intestinal indigestion.

What Dr. Pfingst and Dr. Dabney have said is true. Cases of phlyctenular inflammation of the eye are very common among children such as I have described, and I have encountered many instances of this kind. I recall one child who had stye after stye regardless of local treatment. Under proper regulation of diet, exercise and rest, the last stye which had persisted for several months, disappeared like magic.

INJURIES TO THE HAND AND THEIR TREATMENT.*

By J. Cecil Sparks, Van Lear.

Man in the jungles is just as safe from the wild beasts of the forest as the barriscade with which he surrounds himself. So is that inward principle of man, called life, just as safe from disease as the health and strength of the body which contains that life. Likewise, the various organs of the human body are just as able to perform their work in the many vocations of life as they have been trained and protected.

In preparing this paper I have in mind the protection and welfare of the hands of the laboring man. The hands of the laboring man are just as essential to him, so far as a livelihood is concerned, as the brain of the business man.

I may not be abe to add a great many new theories and treatments, but some of our old treatments are like some of our religions, they had better be rehearsed lest we forget that we possess them.

Injuries to the hand are like injuries to other parts of the body, and, as a rule, are treated similarly. Having in mind the three essential things in the treatment of all wounds, Control of hemorrhage, asepsis, and rest. The proportion of traumatism is larger and so many important structures lie so close to the skin in this part of the body, that a slight injury may have serious effect. The slight unnoticed wound of to-day may become the heroic wound of to-morrow. The slight abrasion or punctured wound of the hand may become a virulent streptococcic infection in but a few hours. But if properly treated no part of the human body responds better to treatment.

*Read before the Johnson County Medical Society.

I shall speak first of fractures and dislocations. Dislocations of the wrist is a rare occurrence owing to the fact that the lower end of the radius is broken by injury, which might otherwise cause dislocation of wrist. This, however, does occur even when we have a Colles fracture. Dislocation of the carpometacarpal joints are rare. When these joints are injured they are most often fractures and sprains. Dislocation of the phalanges often occur but these many times are accompanied by fractures.

Fractures and dislocations of the hand like fractures and dislocations of other parts of the body should be reduced and put in a state of rest.

I shall mention only a few of the simple fractures and dislocations of the fingers. Drop finger is the dislocation most often caused by being hit on end of finger with baseball. The posterior capsule or the extensor tendon is broken. If seen early and well splinted with anterior splint and if kept in extended position for some time very good results are often obtained but if not treated early we may expect very poor results. Passive motion of joint should be delayed lest we break up the newly attached tendon. If the end of the finger is pushed to the extensor side instead of to the flexor side, it is most often a case of fracture instead of a dislocation.

I have had more or less trouble keeping fractures of the first phalanx in position after reduction. I have found this best accomplished by putting a roll of bandage in palm of hand and fastening the finger at half flexed position on the bandage with adhesive plaster. I treat fractures of the second, third, and fourth fingers in this way. The thumb and little finger I put up in straight splint.

Compound fractures of the hand should be treated aseptically if possible from the beginning. If material for a thorough cleansing is not at hand, a piece of gauze saturated with compound tincture of benzoin should be placed over the wound. This could be covered with compress and bandaged. Proper splints should be applied till a thorough surgical cleansing can be had. This I most often do by thoroughly cleansing the wound, first from all dirt and grease by application of benzine. Then I further cleanse parts with alcohol. I then apply tincture of iodine to the wound. The fracture is now reduced and the wound covered with gauze saturated in an aqueous solution of alcohol and tincture of iodine.

The formula of which is tincture of iodine one part, alcohol four parts, water thirty-two parts. The proper splints and bandages are now applied and the wound dressed daily in the solution mentioned above. I seldom have any trouble getting union in compound fractures of the hand dressed in this way. The excellent blood supply and the strong resistance to infection of this part of the body coming to my assistance. However the splints should be so arranged that they may be easily removed to permit dressing of the wound, as suppuration may occur. If the wound heals aseptically a longer time is required for bony union. Hence passive motion should be delayed till third or fourth week. Should we have symptoms of fever, headache malaise, increased odema, tenderness near wound, and a discharge of pus. If discharge is interfered with, we may have tenderness in glands of elbow or axilla. If the above symptoms are present we have suppuration and this should be treated as other infections of the hand, which will be spoken of later.

Crushed fingers are typical cases of compound fractures in which ambulent treatment is demanded. In addition to the above treatment of compound fractures, we should control the hemorrhage by pressure or ligation, thoroughly inspect the wound, and remove any foreign body or detached bone present. Whether the wound is sutured or drained will depend on circumstances. I class all accidental wounds of hand as infected wounds until time proves them to be otherwise. Rubber tissue and bands, I think, is best drain in this class of wounds. These should be removed in two days and if no sign of pus be present they should be left out. Some use dry sterile dressing, but I prefer a mild antiseptic moist dressing. I wish to say here that I never use carbolic acid in these wounds. I have seen some very bad effects from its use. I very often have the patient use a mild antiseptic as the alcohol and tincture of iodine solution spoken of above. I have them keep the parts moist in this. It favors the escape of secretions from the wound and adds greatly to the comfort of the patient.

If the fingers are badly crushed or torn the temptation is great to amputate, making a nice palmer flap and stitch up nicely and when it is well have something nice to show to the influential man of the neighborhood. But this does not always add to the usefulness of the hand. In cases like this I must plead for conservative surgery. The extra time in which it takes to get well should not always be considered and is not considered by most patients, if they can have a longer finger and a more useful hand. It is true a great many stiff fingers are in the way and would be better removed. This is oftener the case with the ring and middle finger but no one ever wants a thumb removed even though it be stiff. It

is far best to pursue a conservative course and never sacrifice any part of finger which can be saved.

I very often, when by the injury an amputation of the finger has already been made leaving part of bone protruding clip the bone back just even with the muscle and skin and leave it to nature to cover the end of the bone. This it will do in only a short time leaving a nice rounded stump and useful finger. Of course this takes time but the prize is worth the price.

Injuries which effect the joints and the joint is opened, should be rendered thoroughly aseptic. Drainage should be had down to the capsule. The capsule may be drained if necessary. After first thirty-six hours if no sign of infection drainage should be left out and wound treated as in other parts of hand. Passive motion should not be begun until joint is healed and soreness and swelling of joint is gone.

Infections in wounds of the hand occur so often that we are made to look on all wounds of the hand whether large or small with suspicion. Yet repair may, and often does, take place in both large and small wounds without surgical interference.

The larger number of infections in the hand occur from apparently trivial causes such as slight abrasions, wounds that bleed but little, pricks from needles, pins, nails, glassware, crockery, splinters, etc.

Certain occupations predispose to infection such as butchers, hostlers, laborers, mechanics, machinists, etc. Suppuration may be subcutaneous, in tendon sheath, or in joint. In opening these we should use great care not to wound unnecessary tissue and spread our infection. Felon is an infection of hand which we are often called on to treat. It seems trivial but some very serious infections have followed this condition. I remember well the first arm I ever amputated was one following a felon of thumb. I have never been able to get but little benefit from medical treatment in these conditions. As soon as I am sure of my diagnosis I resort to a knife. This I usually do under local anaesthesia. I cut down from without inward cutting down until I get free drainage. If the pus is external to sheath, I am careful not to cut sheath lest we light up more infection. If the sheath contains pus I make incision through sheath and give free drainage. I make incision toward side of phalanx infected. The old way of taking a curved history and cutting all felons to the bone is bad practice. It often causes more trouble by opening up a new field for infection. If only the end on the distal phalanx is infected, the incision should not be carried to base of phalanx. This may spread infection to flexor tendon which is attached at base. Pus in the tendon sheath like pus everywhere else, demands evacuation. The close relation of the tendons to other important structures of the hand makes it necessary where we cut and how. But it is always essential that free drainage is had in any infection.

In suppurative thecitis or any pus infection of tendon where the whole tendon sheath is involved, it may be necessary to drain palm of hand or wrist. If the tendons of the index middle, or ring fingers are involved, incision is made over tendon involved. In the palm of the hand the sheath lies beneath the palmer fascia. This limits the swelling in the palm, but the back of the hand may swell greatly as there is no such fibrous tissue in back of hand. We may be tempted to open the back of hand but our pus is pent up in the palm and there our incision should be made.

In case of infection of thumb or little finger there is greater danger and the situation is more complicated. These tendon sheaths usually extend into wrist and involve the radial and ulna bursa. If the infection in case the thumb is involved has been carried to the radial bursa the incision should be made in wrist, keeping in mind the radial artery and median nerve. If we make incision on the outside of tendon of flexor carpi radialis muscle we will avoid irritating the median nerve, but we may come in contact with radial artery. If radial artery is exposed by incision and drain comes in contact with it, it had best be ligated lest it should slough and severe hemorrhage result. In opening up abscesses or punctured wounds of the palm of the hand or wrist, when I fear hemorrhage, I usually cut through skin and fascia with knife. I then introduce a pair of Pean's artery forceps opening up the wound thoroughly.

If the infection is in the little finger it may soon follow the tendon to wrist. We then have our same trouble with the ulna nerve and artery that we had with median nerve and radial artery when our thumb was involved.

When the infection starts in the little finger the palmer incision should be made over the fourth metacarpel bone in order to avoid the digital branches of the median and the ulna nerves. The superficial palmer arch should be ligated and divided if necessary.

When the incision is made in the wrist it should be made so as to expose the tendons of the flexor sublimus and flexor profundus digitorum muscle as the pus, if it extends above the annular ligament, surrounds these. If these tendons cannot be felt the incision should be made one-third of way over from

ulna to radial side. The abscess cavity should be washed and sponged clean but never curetted. I usually pack abscess cavity lightly with gauze to prevent adhesions. This should be removed as often as soiled and the wound redressed. I prefer to dress the abscess wounds with mild antiseptic wet dressings.

I have gotten some very good results by soaking hand several hours a day at intervals in hot epsom salts and sodium chloride solution. Using one half ounce of epsom salts and one drachm of sodium chloride to one pint of sterile water. This gives your patient a great deal of relief and gives him something to do. Between times of soaking any mild antiseptic dressing will do. After granulations begin to form balsam of peru makes a good dressing.

Cellulitis so often accompanies abscess that in every case of cellulitis we should search for suppuration. A small collection of pus beneath sound skin gives greater resistance to the palpating finger than the rest of the inflamed area. If the quantity of pus is larger and near the skin the area becomes oedematous. Cellulitis of hand should be treated by application of wet gauze to parts. If the fluid contains alcohol better results are obtained. I have gotten some good results by keeping hand submerged in hot epsom salts and salt solution. If pus is present it should be evacuated. If there be no visible signs of pus increase of tension and pain are sometimes sufficient alone to indicate incision. Cellulitis in hand does not often lead to gangrene but may do so. Hence the necessity of free incision whenever swelling within the finger threatens to cut off the circulation. After free drainage and careful dressing if the wound still threatens gangrene, the urine should be examined for sugar and albumen. Gangrene due to diabetes and nephritis is far more common in foot cases than in hand cases. But still it may occur in hand.

Suppurative arthritis or infection of joint may be caused by the entrance of some sharp instrument into the joint itself. This puncture or injury may be scarcely noticed at the time but in a day or two the joint swells up and a touch on end of finger shows joint involvement, because the tendency to crowd the bones together causes pain. The shape of the swollen finger indicates that inflammation is in the joint. This infection may only attack the synovial sac or it may effect the ends of the bones.

If suppuration in joint is prolonged the cartilage is destroyed and too long suppuration may destroy the ends of the bones. If only part of one bone is destroyed we may as yet have some motion. If treatment is begun early we may have in a few weeks a very good finger.

The treatment of suppurative synovitis consists of incision into joint, irrigation of joint with peroxide or some mild antiseptic, with drain which may or may not extend into the capsule of joint, with splint which puts part at rest. After a few days the drain should be removed from the cavity and the wound allowed to heal. The splints should be firmly fastened so as to hold finger firm. Sometimes it is almost impossible to get finger straight at first, but this can be gradually done a little more each day. The dressing should be removed daily. This must be kept up for several weeks or until the wound is entirely healed. The patient should still wear a splint for some weeks. The finger should have a daily bath and rub but no attempt should be made to move the joint, until all swelling has disappeared. The financial circumstance of patient may not be so they can wait for results and amputation may have to be performed.

In treating incised wounds of hand the bleeding vessels should be ligated, if necessary, and if incision is necessary in order to find vessel, it should be made in the long axis of the limb. In case of divided tendon or nerve they should be sutured. If the tendon is injured passive motion should be begun early to prevent adhesions of tendon and sheath.

Punctured wounds should all be classed as infected wounds. I treat these by swabbing them out with phenol and follow this with alcohol. In case I do not think the wound thoroughly drained I make incision to bottom of wound and then use the phenol. If the puncture is near important blood vessels, I cut through skin and fascia and then use a pair of Pean's artery forceps to do the rest.

These wounds should be treated with mild antiseptic dressings and await results. If tetanus is feared tetanus serum should be given.

The hands are especially exposed to burns. These are most often produced by boiling water, steam, flame, and electricity. I have seen some very bad cripples caused by burns. many of them having been improperly treated. The treatment of burns of the hand does not differ from other parts of the body. I have gotten as good results from the use of hot boric acid solution as a dressing as anything I have used and I have tried a great many treatments. In case of pus I have used balsam peru and castor oil with good results. I often dress shallow burns with alcohol and iodine solution spoken of above. I have gotten some very nice results from the different

paraffin dressings and can heartily recommend them. I want to emphasize the importance of keeping the fingers extended and keeping them wrapped separately. If a great surface is burned over we should skin-graft, but this should not be attempted till granulations are well established.

In all injuries of the hand our aim in treatment should be to leave the hand as useful as possible never looking alone to anatomical results but to physiologieal results. Of course there are times when we have cases in which we may be called upon to do amputations for cosmetic purposes after injuries. This should never be done when it will destroy or weaken the usefulness of the hand. In closing this paper I must still plead for conservative surgery in injuries of the hand. If we will always bear this in mind and act accordingly, many useful hands will be saved to man.

DIABETES MELLITUS OF FOUR YEARS STANDING FOLLOWED BY PULMONARY TUBERCULOSIS WITH APPARENT CURE OF BOTH DISEASES AS TOLD BY PATIENT.*

By E. A. Cram, Woodmen, Colorado.

Abundance of albumen, one and one-half per cent sugar in urine and tubercle bacilli in sputum. You would not pick this three card combination to bet against the field.

On August 15, 1918, I was handed the above report and I was compelled to place the bet. I picked tuberculosis to win, diabetes for place and albumen to show. I felt like I imagine the criminal at the bar does when the jury says, We, the jury, find the defendant guilty and fix his punishment at death.

I had so often told my own patients when I made a diagnosis of pulmonary tuberculosis that the best thing for them to do would be for them to make a change of climate and I would always end my advice by saying, that if I am ever so unfortunate as to contract tuberculosis that I would go to Colorado, New Mexico or Arizona.

Having been a member of the Modern Woodmen of America for several years, I began immediately making preparations to enter the Woodmen Sanatorium at Woodmen, Colorado, where the Society maintained a Sanatorium for the treatment of its beneficial members afflicted with tuberculosis.

I knew the rules for admission to the sanatorium required me to make application signed by myself and family physician, stating my physical condition as nearly as possible and this application must be sent to the Superintendent of the Sanatorium and if he acts favorably on the application, I would be notified when I could enter the sanatorium as a patient, but having some doubt as to my being accepted on account of my complications, and having fully made up my mind that if I was rejected, I would "play the game" in this part of the country. And on September first with my application in my pocket, I left Walton, Ky., for Woodmen, Colorado.

On September 4th, tired, discouraged and travel worn, I walked into the office of Dr. Rutledge and placed my application before him and he read where my maximum weight was 240 pounds and where I had diabetes, too. He says, "Doc, have you fat man's diabetes?" and I replied, saying, "that I thought so." Then he ordered a preliminary examination to ascertain whether or not I was faking my statements about my tuberculosis and when the examining physician confirmed the diagnosis, the superintendent says, "We have a room in the hospital for you and I want you to go to bed and forget that you are a physician and we will see what we can do for you, but cases like yours usually don't do much good. So with this statement ringing in my ears, I went to the room, where I was destined to stay until April 17,1919, where I became a thorn in the side of the physicians and nurses.

After a rest of a day or two, I was invited to the examination room where my family history was traced back to Adam, and I was measured, weighed, percussed, palpated, stethoscoped, radiographed, photographed, blood counted, urinalized, Wassermaned, sphysmanonometered, and the previous diagnosis confirmed.

The one question which at this time was puzzling me, was which one of my diseases needed treatment first. I was not left in doubt long when my physician informed me that after a few days rest, he would put me on Allen's starvation treatment for diabetes, and after completely withdrawing all food for thirty-six hours, I was declared sugar free and placed on a diet as laid down by this treatment, and by the time my daily allowance of food had reached the point where my appetite was satisfied. I had lost in weight about fifteen pounds. But only twice since that time have I had any sugar, and there is made a urinalysis for me every day.

One time during the latter part of January, I was suffering from a severe toxemia caused by an effusion of fluid in my left pleur-

*Member of Pendleton County Medical Society.

al cavity, and a trace of sugar was found about three months ago, but it only lasted for one day. The dietitiar tells me that my tolerance for carbohydrates is considered very high and on the date of writing this, July 24, 1919, I am consuming daily from 3000 to 3200 calories of food of which the carbohydrates furnish from 250 to 265 grams. On this diet, I am gaining from one to two pounds each week, and voiding about 1800 c.c. of urine every twenty-four hours, and the specific gravity ranges from 1014 to 1024, and is free from sugar, albumen and diacetic acid.

The Allen starvation treatment bears about the same relation to drug treatments of diabetes as white does to other colors, being the absence of colors. During my first two months in bed, I had plenty of time for meditation and reminiscence. I lived my life over again several times, during that time. Each day was like unto the day before. I did not take much medicine, occasionally some aspirin for headache and other pains and bicarbonate of soda when my physician thought acdosis might be imminent.

At the end of this time, if I had made any improvement in my pulmonary condition, I could not discern it, and my physician evidently thought the same, for he wrote on my chart, "No improvement " under rest cure, but not a suitable subject for artificial pneumothorax, and after another month of waiting and resting, I asked my physician if he thought I ever would be in condition to have my left lung collapsed, and after a thorough examination, he said "that he would try to collapse my lung," but he said, "I collapsed a lung for a patient like you once, and he didn't do much good."

After he decided to collapse my lung, if he had said to me, "I will give you your choice between appendectomy and collapsing your lung, the results will be the same," I would have chosen appendectomy, as I felt that I knew what to expect and of the "modus operandi" of collapsing the lung, I knew nothing.

On November 27, 1918, I had 400c.c. of air injected into my left pleural cavity and by night part of it had leaked and worked its way under the skin up to my neck, where it had caused some pressure symptoms. The external feeling of the air under the skin was the same as veterinarians find when they examine cattle with black leg. This condition only lasted for a day or two.

On November 29th, 500 c.c. of air was injected and you can have an idea of my feeling when you have your lung space cut in half. You lay and pant like a dog on a hot day. With plenty of air all around you can't breathe fast enough to get the air into your lung (not lungs), but you soon become accustomed to this feeling and don't notice much except a feeling of fullness in your inflated pleural cavity.

On December 11th, 1000 c.c. of air was given. On December 18th, 1100 c.c. of air was given, and the roentgenologist on this date made a roentgenogram of my chest, and reported a partial collapse of my left lung.

On January 1, 1919, 900 c.c. of air was given. On January 15th, 900 c.c. was given. From November 27th to January 20th, I couldn't see any change in my general condition, pulse and temperature about as they had been, appetite very good, cough and expectoration about the same, and weight the same.

On January 20th, I was taken with a severe chill and a rapid rise in temperature, with a sharp pain in my left side and my physician was called, and by this time I was "*hors de combat*" as the French would say. My physician said that he anticipated an effusion in the pleural cavity. This was followed with one and two chills daily, accompanied by all the symptoms that go with chills, and about this time my physician pronounced my trouble as effusion in the pleural cavity.

On January 29th, 700 c.c. of air was given, and on February 5th, 1000 c.c. of fluid was aspirated and 800 c.c. of air was injected. On February 12th, 100 c.c. of fluid was aspirated and 300 c.c. of air was given. On March 12th, 1100 c.c. of fluid was aspirated and 700 c.c. of air was injected. This fluid was of a frog pond green in color and had a specific gravity of 1022 to 1028 and had no perceptible odor. I could easily demonstrate to my own satisfaction that I had fluid by changing positions or stooping over. I could feel the fluid move and I could hear the splash plainly.

While I was suffering from the toxemia caused by this fluid, I lost flesh rapidly until I was reduced to 140 pounds approximately. I had a pressure sore on each hip and callous places on each ear commonly called corns, and it was almost impossible to find a position which I could lie in comfort. I reminded myself of a dog trying to find a place to lie down by turning around and around.

I date my improvement from my first aspiration. The chills became less frequent and less severe, and my temperature gradually declined, and my appetite improved steadily. I had a return of the glycosuria and albuminuria due, I think, to the disturbed metabolism at this time but readily cleared up on a curtailment of rations and a properly regulated diet.

On April 3rd, 200 c.c. of air was injected and on April 23rd, 200 c.c. was injected. At

these sittings, I still had some fluid, but as I was absorbing no toxines, it was left in the cavity to act as a compressing agent. On March 17th, I experienced my first day of being free from fever for at least eight months, or since I had been in the hospital. I never was free from fever, usually running from 99 to 102.6 degrees. On April 17th, I was able to walk out of the hospital, after being a resident there for 225 days.

I thought that I never saw the sun shine so bright, nor the birds sing so sweetly as they did on that April morning. On May 4th, 300 c.c. of air was injected. On June 4th 300 c.c. was injected and June 25th 500 c.c. of air was injected. On July 9th, 400 c.c. was injected, and on July 30th, I am due to get another injection. Just how much I will get depends upon the air pressure at the time.

I am told that three years is the minimum time for this treatent. Since leaving the hospital I have been living in the colony, and at the present time I have gained in weight until I weigh 178 pounds.

I weighed exactly this amount when entering the hospital, as a patient. I was classified upon entering the hospital as far-advanced in left lung and moderately advanced in my right lung, and to-day my physician tells me that my left lung is completely collapsed and my right is in good shape. I have had more or less involvement of larynx and one time, for a month, I had almost complete loss of voice.

The salient points of my recovery so far are: (1) artificial pneumothorax, (2) a correct anti-diabetic diet, (3) seven months and a half of rest in bed, (4) a good resistance, (5) a good appetite and a good digestion. While I never expect to be a 100 per cent man again, I do expect to get back into the harness and make a livelihood.

In writing this report of my own case, it has not been my purpose to write a scientific article on the treatment of diabetes and tuberculosis, but to record my experiences and impressions in dealing with two formidable foes for the last twelve months, and perhaps furnish the silver lining to some fellow-sufferer's clouds of despair and to show how it feels to be ridden after being the rider for fifteen years.

The man who becomes the host of the tubercle is indeed very unfortunate, but the man so afflicted, who becomes a guest of the Modern Woodmen of America Sanatorium for twelve months is doubly fortunate.

BOOK REVIEWS

New and Nonofficial Remedies, 1919—containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1919. Cloth. Price, postpaid, $1. Pp. 388, XXIX. Chicago: American Medical Association, 1919.

In this book are listed and described those proprietary remedies which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association and which should therefore, merit consideration by the medical profession. The book also includes the newer nonofficial nonproprietary remedies that seem to the Council to give promise of therapeutic value. New and Nonofficial Remedies makes use of the Federal Trade Commission names for products originally introduced into this country by German manufacturers. These include arsphenamin, barbital and procain preparations replacing salvarsan, veronal and novocain respectively. The Council has omitted from the present edition all articles not now on the market, many of them originating in enemy countries. Among the most valuable features of this book for the physician are the thorough discussion of various therapeutic substances, including composition, dosage, therapeutics, actions and uses, etc. The article on digestive ferments, serums and vaccines and silver preparations have particularly been thoroughly revised, and it will be to the interest of every physician to acquaint himself with the present status of knowledge regarding the use of these preparations as brought out in this book. In a supplement to the book are given references to the reports of the Council on Pharmacy and Chemistry, and the publications of The Journal regarding proprietary articles which have not been accepted. The material available in this book is nowhere else available, and its authoritative character makes it a therapeutic guide which should be in the hands of every practitioner.

1918 Collected Papers of the Mayo Clinic, Rochester, Minnesota.—Octavo of 1196 pages, 442 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $8.50, net.

The papers from Mayo Clinic are always of interest to the profession and in this volume some of the subjects discussed are: Esophageal diverticula, cantery excision of gastric ulcer, acute perforations of the abdominal viscera, fistula of colon, prostatic calculi, carcinoma of small intestine, polyposis of stomach, war syphilis, adenomyoma of uterus, serum in epidemic poliomyelitis, treatment of empyema, autolyzed pneumococci in lobar pneumonia, friction of neck of femur, etc.

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NEXT MEETING LEXINGTON, 1920.

COUNTY SOCIETY REPORTS

Franklin—At a meeting called by the president Dr. John P. Stewart, of the Franklin County Medical Society to take suitable action in regard to the death of Curtis Austin, which occurred on the 15th of August, very suddenly, F. W. Mastin was appointed a committee to have a suitable floral design sent to the family of the deceased as a token of our affection for our esteemed brother. Also a committee was appointed composed of Drs. Coblin, Coleman and Williams to prepare suitable resolutions expressing our loss of Dr. Austin, who was one of the few surviving members of the Franklin County Medical Society at its inauguration, who twenty years ago removed from Franklin county to Shelby county and became a member of the Shelby County Medical Society, whereupon he was unanimously elected to honorary member of this society, few meetings of which he has failed to attend.

It is useless to pass fulsome encomiums upon a deceased brother whose life has been devoted to his profession and which he has adorned with honor and usefulness through a period of about 30 years, enjoying the esteem of his fellow practitioners and the love and the confidence of his clientele. He was a competent physician, a Christian gentleman and we desire to express to his family our tenderest sympathy and heartiest condolence. We desire a copy of the transactions of this meeting to be sent to the Kentucky Medical Journal, a copy spread upon the minutes of this society and a copy sent to the family of the deceased.

U. V. WILLIAMS, Secretary.

Hardin—The Hardin County Medical Society met on August 14th, 1919, at Elizabethtown, with the following present: C. Z. Aud, president; H. R. Nusz, J. C. Mobley, J. M. English, W. F. Alvey, F. P. Striekler, Jr., S. T. Hubbs, C. C. Carroll, W. J. Shacklett, Guy And, S. L. Stull, S. N. Willis, C. W. Rogers, E. W. Montgomery, F P. Strickler and D. E. McClure with P. H. Conover and others visitors.

The minutes of the July meeting were read and approved. The regular report of cases was interesting.

C. C. Carroll read a paper on "The Care of a Normal Child During the First Two Years of Its Life," which was one of the best read before the society for some time.

The afternoon session was devoted to an address "Legal Medicine," by **Hon. G. K. Holbert.** This was a very able paper dealing with the development of the Science of Legal Medicine and was highly appreciated by the society for which they tendered a rising vote of thanks

The society adjourned at 3:15 p. m.

D. E. McCLURE, Secretary.

Russell—The Russell County Medical Society Public Health and Community Meeting was held at Russell Springs, August 23, at the Methodist church. The crowd was not as large as it should have been, as it was or seemed to be, an extra busy day for the business men, kept many from attending.

It was suggested by some or most of the citizens present that the future community meetings and health meetings be held on Sundays, and upon a kind and urgent invitation of Hon. Lilburn Phelps, of Jamestown and Rev. H. B. Guinn, of the First Christian church of Jamestown, to meet at Jamestown, September 14, at 10 A. M., the invitation was quickly accepted for the above place and date. The program for said meeting has already been arranged and sent to the local press for publication. All who failed to hear the able talks by Hon. Lilburn Phelps, Senator Robt Antle, Robt Ingram, Mrs. Ara Wilson, H. B. Guinn, Dr. L. D. Hammond, J. B. Tartar, Dr. Tinct Miller, Dr. A. W. Cain, missed a treat. Our society feels thankful and honored by such men and lady addresses. Surely no one who can will miss the next meeting as some or most all of the above speakers are on program for September 14th. A county hospital to be located somewhere in Russell County, probably at Russell Springs, came in for its part of the discussion. It advanced so far that a committee on ways and means, composed of Rev. H. B. Guinn and Mrs. Ara Wilson, of Russell Springs, and Hon. Lilburn Phelps, of Jamestown, was appointed, to make a report with regard to the possibility of getting the hospital established and full particulars of cost and donations, locations, etc., with recommendation of the committee.

There was an interesting clinic. All were carefully examined and prescribed for by the physicians present. Could not get through with the elaborate program in one day, so we were compelled to continue some of the good essays and addresses until September 14, when they will be read by able essayists. We hope that some one of the State Board of Health will be with us September 14th and help out.

I am requesting the Editor of the Kentucky Medical Journal to send a marked sample copy of The Journal with this report in it to the following addresses: Rev. H. B. Guinn, Russell Springs; Robt. Ingram, Russell Springs; Mrs. Ara Wilson, Russell Springs; Senator Robt. Antle, Olga; Hon. Lilburn Phelps, Jamestown.

In closing this report your humble servant of the society sat with mouth and ears wide open, listening to the able talks by the speakers: lawyers, bankers, farmers, merchants, ladies and doctors, hoping they would leave a gap down or leave something unsaid that I might blow a little, but I was chagrined to learn that all was said that could be said, and all I could do was to jump up and hollow, amen, to all .

J. B. SCHOLL, Secretary.

NEWS ITEMS AND COMMENTS

Some of the members of the Saint Louis Medical Society have organized a section of that body called the Clinical Section of the Saint Louis Medical Society, and have established a system of clinics to which members of our association are invited when they are in Saint Louis. The advertisement appears in this issue under the heading "Saint Louis Clinics." There is a large amount of clinical material in St. Louis which has never been organized, but now should afford splendid opportunities for physicians who desire to take advantage of the arrangement.

Dr. John B. Floyd announces the opening of his office in the Atherton Building, Louisville. Practice limited to diseases of the chest.

Dr. Frederick I. Yates announces that he has returned to civil practice after one year of active service on the American front in France, with offices: 607 Coppin Building, Covington, Ky.

Commotional Factor in Etiology of Shell Shock.—Experiments were made by Carver on fish, rats and mice, using various kinds of explosives in varying quantities and at varying distances, to determine the existence of commotional and emotional syndromes. Carver tried to outline a picture of the early syndrome which distinguishes the more severe cases of commotional shock, but the symptoms in slighter cases become almost inextricably blended with others which appear identical with those resulting from emotional shock. Hence, Carver concludes that while one may at the two extremes deduce with each the nature of the primary pathogenic factor from a study of the syndrome exhibited, this becomes increasingly difficult as one approaches the intermediate members of the series, and one's judgment is largely determined by the aspect from which one approaches the problem.

Interpretation of Heart Murmurs.—Esmein regards the French method of examination for heart murmurs as far superior to the British for various reasons which he explains. It consists in thorough auscultation supplemented by compression of the eyeball. This latter reenforces organic murmurs and weakens or abolishes the inorganic. Radioscopy supplies further evidence when needed. The British accept as organic every diastolic murmur, while the systolic is assumed to have no significance, but this is not accurate.

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EDITORIAL

THE ASHLAND MEETING.

Another of the annual milestones which mark the progress of organized medicine in Kentucky, was successfully set up at Ashland during the third week in September.

In many ways this was one of the most successful meetings the Association has ever held anywhere. The local arrangements were perfect. The profession and people of Ashland entertained the visiting physicians with a kindly hospitality that will always be a pleasant memory to all who attended.

The boat ride on the beautiful Ohio, and the pleasant cordiality of the beautiful women who made the trip so pleasant, aroused all the dormant romance in the older members, besides starting many new things, of which more will be heard later.

The scientific program was extraordinarily good. The papers were timely and interesting, and the discussions were participated in by more members than at any meeting for the last several years.

The proceedings of the House of Delegates did not contain as much of interest as usual, although many matters of importance were discussed, and much progress was made in again arousing interest in a renewed campaign for increasing the value of local organizations.

The Association will meet next in Lexington in 1920.

THE NEW OFFICERS.

Dr. John G. South is the President of the Kentucky State Medical Association for the ensuing year. Dr. South needs no introduction to the profession of the State, but his handsome photograph, sent with this issue, will be hung with pleasure in the gallery of our Presidents. Dr. South is the first to hold the double honor of Presidency of the State Board of Health, and the State Medical Association.

The President-elect, Dr. W. W. Anderson, of Newport, is as well and favorably known as any member of the Association. Since the Paducah reorganization of the Association, he has been a constant attendant on the annual meetings. His papers, both on scientific medicine and medical sociology are among the classics. As favorably as Dr. Anderson has appeared before the State Association, his special role has been as a member of the Campbell-Kenton County Medical Society. At the beginning, this organization was upheld and supported by Dr. Anderson's labors, and now that it is the second largest county society in Kentucky, and one of the most active in the whole country, it seems especially fitting that he should have been so signally honored by elevation to the Presidency.

Drs. Irvin Lindenberger, of Louisville; P. C. Layne, of Ashland, and D. J. Travis, of Eddyville, were elected Vice Presidents. Dr. J. B. Kinnaird, of Lancaster, is the new orator in medicine and Dr. C. A. Vance, of Lexington, the orator in surgery.

For the twenty-second year, Dr. W. W. Richmond will be the delegate to the American Medical Association.

The list of its members honored by official positions in the Association, is as creditable to it, as to the distinguished, loyal men on it.

THE SOUTHERN MEDICAL.

The Southern Medical Association will meet at Asheville, November 10th to 13th inelusive. This is the really great scientific medical meeting for Southern doctors. The Southern Medical is the second largest medical organization in the United States, and is growing rapidly. It is hoped that we can have the 1920 meeting in Kentucky.

The program for this session indicates that every hour will offer abundant scientific reward for the physicians who will attend. In the four days, one ean get a thoroughly good post-graduate course, and at the same time

have a delightful trip to one of the most interesting cities in the South.

The railroad administration gives a regular round trip rate to Asheville.

It is hoped that many Kentucky doctors will be present.

THIRD SURVEY OF HOSPITALS.

The third survey of hospitals being made under the auspices of the American Medical Association is now well under way. Through an extensive correspondence and a third questionnaire the Association has collected a mass of information on the subject. Much of this material has been tabulated and forwarded to committees in each state representing the state medical associations. Most of the state committees have arranged definite lines of action and by inspection of the hospitals or by other methods are securing first-hand information by which the data collected by the Association is being carefully checked. The immediate end sought is to provide a reliable list of hospitals which are in position to furnish a satisfactory intern training. The investigation is not limited to intern hospitals, however, but will cover all institutions and the data obtained will be useful in any future action which may be taken in classifying hospitals. The work in Kentucky is in charge of a committee of which Dr. Frank Boyd, of Paducah, is chairman, and Dr. L. S. McMurtry, Professor of Abdominal Surgery and Gynecology, University of Louisville Medical Department, Louisville, and Dr. L. C. Redmon, Lexington. The closer relationship which the hospital now bears to the public in the community which it serves makes it all the more important that the service rendered by it shall be excellent in character.

MORBIDITY REPORTS.

It is gratifying to announce to the profession of the State, the immediate success of the system of morbidity reports inaugurated by the State Board of Health in September.

The system has not quite been completed, due to the delay in certifying health officers in a few counties.

Three things are emphasized by the reports received for the first week:

There is a wide-spread epidemic of typhoid fever in almost every county in the State. Both the State Laboratories at Lexington and Louisville are receiving more Widals than ever before. More than ten times as much typhoid vaccine has been ordered as in any other season in the history of health work in Kentucky. The examination of hundreds of specimens from Kentucky wells and springs, shows almost universal fecal contamination. In many cases this is due to carelessness in the management of the tops of wells or cisterns. In all cases, it is due to carelessness—frequently criminal carelessness—in the disposal of human excrement.

In the next place, there is a recent increase in the number of cases of diphtheria. The death rate from diphtheria has been decreased 66 per cent in the past nine years. Half the deaths last year occurred in cases which did not call a physician during the first three days of the child's illness. There would be no deaths where 5000 or more units of anti-toxine were given within the first twenty-four hours. The importance of having a physician see cases of sore throat within the first twenty-four hours, cannot be too greatly emphasized.

The third great fact brought out by the morbidity reports is that most cases of tuberculosis are not under the care of a physician. How much of the blame for this is due to the attitude of the physicians in regard to tuberculosis? There is no class of cases which demands more painstaking, expert care, nor less medicine. These people need dietary advice, advice as to methods of living, as to how to sleep and rest; but they do need the care of a physician constantly, and the JOURNAL desires to urge the profession of the State to carefully consider its attitude toward the tubercular, with a view to supplying them with the expert care they need.

All of these things go to emphasize the absolute necessity in each county of the State, for a county health department, with personnel devoting its entire time to its tremendous task. The medical profession especially is charged with great responsibility in this matter. It must be made plain that it will require more physicians to keep the people well than it takes to cure them after they become sick. It must be made plain that those who protect their health should receive adequate compensation, and that it requires as much skill to be a good health officer as to be a good physician.

The success of the morbidity reports is largely due to the splendid cooperation we are receiving from the United States Public Health Service, without which, even its initiation would have been impossible.

The State Medical Association at its Ashland meeting passed strong resolutions urging the continuance of the morbidity report system, and especially urging that physicians report their cases of venereal diseases promptly and fearlessly, as required by law.

SCIENTIFIC EDITORIALS

FOLIA UROLOGICA.—"BEITRAGE ZUM ANATOMISCHEN BAU DER PROSTATA."

Von Dr. Moritz Porosz, Budapest.
(Abstracted and Translated, Lehmann-Stettin.)

"A CONTRIBUTION TO THE ANATOMICAL STRUCTURE OF THE PROSTATE."

1. The spermatic ducts are being closed by the sphincter spermaticus, demonstrated by me anatomically.

2. The muscular apparatus proper of the sphincter spermaticus is a circular part of the prostate muscle surrounding both openings of the ducts. The muscular fibres are grown together and surrounded by a common ring.

3. The sphincter spermaticus is situated within the colliculus seminalis.

4. More intensively the sphincter can be contracted only by simultaneous contractions of the prostate.

5. The stronger the prostate muscles, the more lasting the cohabitation.

6. The greater the resistance of the closing, the greater voluptuous sensation.

7. The colliculus seminalis does not have any corpora cavernosa.

It is unable to cut off the urethra from the bladder during ejaculation.

8. The regurgitation of the ejaculated fluid is being prevented by the strong sphincter vesicae internus.

9. The sphincter spermaticus alone explains the clinical trouble of the genital function, which I have called "Atonia Prostatae" (ejaculatio precox; increased libido; decreased voluptuous sensation; pollution during sleep; defecation spermatorrhoea, passing later on to miction spermatorrhoea; lack of ejaculation of the semen, and lack of the commonly afterwards during miction ejaculated drops; dreams with little irritating imaginations and still pollutions, etc., etc.)

10. The course of the prostatic ducts shows that the prostatic glands should be emptied by pressure of the fingers only from the upper pole of the lobe towards the point of the prostate (kneading or pressing from one side towards the other is wrong.)

11. The uterus masculinus is also affected in case of prostatitis; its expression as well as the expression of the prostate gland is well to be done only by the faradic current—as I have demonstrated.

STERILITY IN THE MALE FROM CAUSES OTHER THAN VENEREAL DISEASE.

Lespinasse (Chicago). The absence of sperm from the semen is usually caused by Nisserian infection. In the present paper we will discuss only the types of sterility in the male due to causes other than venereal diseases.

The first type of case is a congenital or acquired absence of the vas deferens. Of this type I have had one of each kind. The patient who had the congenital absence of the vas, he had never been sick and had never had any venereal disease. His sexual desires and abilities are normal. Examination showed large, well formed testicles and a slightly enlarged epididymis with the findings identical on both sides. Upon operation both vasae were found absent from the tail of the epididymis to the external abdominal ring, no spermatozoa were found in the epididymes.

The second case is one of acquired absence of the vas deferens, with absence of the lower half of the epididymis and a complete absence of the vas from the external ring to the epididymis. He had been married twice, having had a child by his first wife. He had had a mild gonorrhea prior to his first marriage. He had noticed a gradual decrease in amount of semen for a period of several years. At present time, he only ejaculated 1-2 c.c.

Since the article was written the author has had another patient with unilateral acquired absence of the vas, due to gonorrheal epididymitis.

Injuries produce azoospermia by closing some of the ducts leading from the testicle. The two common types of injuries producing azoospermia are severe pelvic injuries and perineal operations for stones in the bladder.

Mumps is a common cause of male sterility. The lesion caused by mumps may be either a destructive one, involving the parenchyma of the testicle, or it may cause the sterility by simply blocking the excretory tubes of the testicle.

Aspermatism of either the neurotic or structural type causes sterility.

Impotency is another cause of sterility.

The X-ray causes sterility by destroying the spermatogenic tissues of the testicle.

Then we have a large group of cases (weak spermatozoa) in which the spermatozoa are present, but they are deficient in some essential structures or function, so that they are unable to impregnate the ova.

TREATMENT.

Congenital absence of the vas should be treated by the sac method operation, as devised by the author.

Sterility due to mumps, when due to destruction of the parenchyma of the testicle, is irrelievable, when due to occlusion in the ducts, vas or epididymis, the necessary operation for relief will be either resection of the

vas, the Lespinasse sac operation or the direct vaso-epididymostomy, depending upon where the obstruction is situated.

Aspermatism of the structural type can be relieved by the sac-operation, and the neurotic type by artificial insemination.

Sterility due to impotency is best relieved by artificial insemination.

Sterility due to defective spermatogenesis can be relieved by direct uterine insemination.

RESTRINGIMENTI DELL' URETRA E LORO RAPPORTI CON LE FUNZIONI GENITALI NELL'-UOMO.- G. FINOCCHIARO DE MEO, DI CATANIA.

All strictures of the urethra originating mostly from simple inflammation are apt to alter or even abolish the physiological function of the sexual organs.

The urethral obstacle prevents even in cases with possible micturition the ejaculation during erection either by the viscosity of the semen or by the altered tonus of the urethral walls.

Moreover the urethra must remain sensitive, elastic and contractile in order to meet well their physiological functions, these qualities decrease by former inflammations of the channel and the genetic functions become markedly altered.

Consequences of urethral strictures are: edema of the prepuce, induration of the penis, delayed ejaculation, lessened ejaculation, power of the semen, sterility, impotence and atrophy of the testicles.

In order to improve the genital functions and prevent the testicular atrophy, the obstruction of the channel must be removed; by this means obstructions of the vas deferens, inflammations of the seminal vesicles, inflammatory swellings of the prostate and later contractions of the ejaculatory ducts can be prevented.

Knowing the dangerous consequences of narrowed urethra and considering the psychic alterations possibly caused by such lesions it is our duty to be careful in cases of so-called sexual neurasthenia which in most cases has a pathological base.

UBER PERINEALE URETHROSTOMIE

Dr. B. N. Cholzow.

1. A permanent perineal fistula is valuable and should be made in some rare exceptional cases.

2. Poncet and his pupils give rather wide indications for this operation; but to-day we have means of curing severe strictures and their complications so that some of Poncet's indications can be completely excluded.

3. Strict indications for making a permanent perineal fistula should be:

(a) Scarry degeneration of the greater part of the urethra, if the micturition is very painful, the canal only little dilatable, if the dilation is also very painful and altogether no hope of improving the condition of the patione by the ordinary methods of treatment.

(b) Obliteration of the urethra of some extension in case of scarry degeneration of a great part of the remaining passable urethra.

(c) Sometimes purulent incurable false urethral ways.

(d) Certain irreparable defects of the pars pendula urethrae.

4. Poncet has proposed two methods of making a perineal urinary fistula; either cutting the urethra behind the stricture and stuturing the central end of the canal into the skin wound (urethrostomie definitive), or opening the urethra by longitudinal incision behind the stricture (urethrostomie temporaire). The author uses in all cases the second method which gives a broad opening without the danger of contraction. This method is also preferable as it leaves the possibility to close the new opening by plastic operation in case the course of events would change the conditions, for instance if the urethral defect could be closed or if the anatomical alterations of the urethra could be proven incorrectly judged.

5. In the cases described the perineal fistula is preferable to the supra-pubic bladder fistula: through the bladder fistula the urine escapes continuously compelling the patient to wear a urinary receptaculum. After urethostomy the micturition is periodical and under control of the vesical sphincter, with the same intervals as in cases without fistula.

Carl Lewis Wheeler.

NURSE ANESTHETISTS.

The proponents of the nurse anesthetist have succeeded in having passed by the General Assembly of Ohio, a bill or an Amendment legalizing the "administration of anesthetics by registered nurses, properly trained in recognized hospitals, under the direction and supervision of a licensed and qualified physician."

We wonder, after a few minutes of pondering over the above, with its jokers and riders, what interpretation one is to put upon it. What is "properly trained" and who decides when a nurse is properly trained to administer anesthesia? Is a nurse when graduated from the Training School Hospital with her diploma, "properly trained?" Presumably, for nursing, but in no training school with which we are familiar has she acquired any knowledge or experience which would make her a fit person to whom a patient might en-

trust his life under an anesthetic. And what is the "direction and supervision of a licensed and qualified physician?" If a nurse technologist administer an anesthesia under the direction and supervision of an experienced medical anesthetist who was doing nothing else than supervising one or more such administrations at a time, it were not so bad. But it is not so to be construed. "Direction and supervision of a licensed and qualified physician" is a catch phrase pure and simple, and one which is necessary for the non-medical anesthetist to hide behind, else she is practicing medicine.

Every doctor knows and none so well as the surgeon, that a man busy and intent on a surgical operation cannot simultaneously direct and supervise an anesthesia. He cannot in fact, but he can in theory, and therein lies the joker. The pathetic feature is that the joke is on the patient.

Vicious as the Ohio Act is, and we know the wording means nothing, it is probably not so bad as conditions in our own State. Taking the decision of our Court of Appeals as a precedent, any nurse, or for that matter any layman may under a doctor's supervision, or at a doctor's orders—the life-saving, meaningless phrase is there again—administer an anesthetic, and we know that in some of our hospitals nurses are blithly assuming this duty. That they have no special training even to make acceptable technologists of themselves, and that they have not the experience of a dozen cases behind them, apparently concerns them not at all; nor the surgeon who engages and "supervises and directs" them.

It is a dangerous policy—for the surgeon. In a suit following an anesthesia death at the hands of an inexperienced nurse, whether due to her inexperience or not, he might have difficulty in showing that he had used all necessary or average precautions. Conscientious surgeons will hesitate before taking such chances, for the patient to whom his first duty lies and whose confidence in him is supreme and serene is the one who all unknowingly takes the chance.

No one doubts nor denies that, taking surgical patients as they come, unselected, a greater mortality may be expected in the hands of the tyro than under the anesthetist of wide experience and of medical training. And that the former can be directed and supervised by the operator is so far from the truth as to be ridiculous when viewed seriously. We have many times seen a surgical patient in the midst of an operation develop some symptoms that were alarming,—"go bad;" and have nursed them along with what skill we had and what therapeutic measures suggested themselves, refraining from alarming the operator, till the patient's condition resumed a more normal aspect. We have sweat blood over many a patient while the surgeon worked serenely on and never suspected that we were in trouble at our end of the table; and we wonder, had we been looking to him for supervision and direction, just where we would have been "at".

In dire emergency, when no anesthetist is available, the use of a nurse—or any one else—to administer the anesthetic is, of course, permissible. But asking a nurse to give a few anesthetics because she wants to learn how is a practice that a conscientious surgeon will not countenance. It subjects his patient to a risk that, to say the least, is greater than need be, and one which the latter himself, if he knew the facts would not take. The surgeon owes his patient, be the latter rich and influential or poor and outcast, the best that can be had.

So much for the "occasional" nurse anesthetist. As to the nurse who devotes all her time to giving anesthesia, and is now known as an "anesthesia technologist," a little more may be said. She has been "specially trained", for three or four or six months—whatever that means—and will invariably be found following a routine technic perfectly mechanically. That such a one may achieve and exhibit much skill in the automatic administration of anesthesia is freely admitted. We have seen some who were artists; but we have never seen one who was other than an automatom. The anesthesia technologist is nearly always sheltered behind the portals of some hospital or supported by one or two or a small group of operators. Incidentally she is frequently exploited and some of the nurse's organizations as well as some individual nurses are gradually awakening to the obvious fact.

If a nurse gives anesthetics worth four or five hundred dollars a month at current fees and accept a salary of $75.00 or $100.00 she might well ask herself who gets the difference. If the anesthesia technologist would demand fee payment and make her own charge entering the field "on her own", we predict that her vogue in some quarters would rapidly fall off. On an equal basis and with no ulterior motive possible the surgeon would prefer the trained medical specialist, whose ability in his field extends somewhat beyond the mere act of skillfully administering the anesthesia; that being the most easily acquired and least important of his qualifications.

That the men who are trying to elevate the science and art of anesthesia to the dignified position now accorded the other specialists should have their bitterest opposition from within the ranks of their own profession, is a sad commentary on the loyalty and p: ofes-

sional courtesy that we as a profession like to claim.

We submit that the advances in anesthesia and analgesia, the increased safety, the refinements of technic, the invention and perfection of apparatus and devices by which these refinements are put into practice have almost without exception been the result of the work of anesthetists. We submit that the surgeon has profited more than anyone by this research and these advances, and should be the first to encourage the development of anesthesia as a specialty and to recognize the anesthetist as a co-worker.

We believe in the practice of medicine being confined to doctors. We speak especially of anesthesia because that is our specialty, and our department in the JOURNAL. But we believe that delivering babies, and treating errors of refraction as well as administering anesthesia are comprised in the practice of medicine. To that end we would like to see the Medical Practice Act tighten up so that ignorant midwives, department store oculists and nurse anesthetists would find themselves facing the necessity of showing their qualifications to the Board of Health, or quitting.

W. H. LONG.

WELCOME TO THE RETURNING ARMY MEDICAL MEN.

We welcome you home with the extended and glad hand of fellowship; welcome you from "the fields of your fame fresh and gory"; from the carol of the Big Guns, to the carol of My Old Kentucky Home. Thrice welcome.

You have done your part nobly, suffered and sacrificed, until Winged Victory perched upon your banners. Victory is yours but not Peace. The smoke of battle has cleared away; you no longer hear the shrieking shell and gun fire rattle; you no longer see the terrible holocaust of field and Hospital, for war has ceased; and the one thing for which the world has fought, and bled, and died, has been attained. You have lived to see the downfall of Autocracy and Militarism and the substitution in its place of the sublime right of peoples to be free. But you cannot rest from your labors, nor return like Cincinnatus to your plow. There is no peace today in this uneasy and restless world of ours. The same spirit that moved to deeds of heroism and untold sacrifice upon the blood stained and racked fields of Flanders, must inspire us again that we may still retain for ourselves and future generations the great heritage that was handed to us by our forebears.

Respect and reverence for freedom and all the glorious privileges given us under our noble Constitution, must be enforced. The freedom of to-day as we understand it, does not mean the Cave Man's right to seize and selfishly by force make what he wants his own. Freedom is but another name for the privilege of working out our own destiny, developing all the best that is in us and at the same time respecting the rights of others. We must be willing to sacrifice a portion of our unalienable individual rights so that the communal rights, in which we too will share, shall become the paramount objects of law and government. No man can really be free himself who does not wish to live under a reign of law and who does not consider the rights of his fellowman. Every human being wants to live and everyone seeks happiness, turning toward them as the flower turns the petals of its beauteous bloom toward the glorious sun. Under the laws of a free Republic there should be equal opportunity, a fair and generous chance. The child, soon to become a man or woman, must be trained and educated, must have inculcated into and made a part of its very soul life, a love of country, a reverence and devotion to its flag, a respect for and obedience to its laws, until in every fibre of the child soul and body there exists a loyalty to Country, its republican institutions and a love for its laws. Then truly can it be said that each and every individual may without fear, without reproach, with pride and honor persue the even tenor of his way assured of safety and the protection of life, liberty and the pursuit of happiness. I would rather be an American citizen, live under the laws of my republic, throb and pulsate to its high ideals, to feel that no matter how big the question, Americans were able and capable of settling it; to feel that force and fraud, falsehood and injustice would never be tolerated in this broad land of ours; these rights I would rather have than to have been the "noblest Roman of them all."

And when my Country, my State and my City, has conferred upon me all these equal opportunities, all these rights and privileges, then it must cease to help and do nothing to hamper. If then with all these advantages, I am unable with my brain and the brawn of my good right arm, to carve out my own destiny, then I must be content to find my own level for the fault lies not in the laws of my Country, or in liberty or in opportunity but in me. I must then bear the burden of my inefficiency and not try to seek in the Utopia of a paternal government, a panacea for my

weakness and shortcomings. They that strive not, they that labor not, verily they should not partake but justly and truly suffer for their unwillingness to do rightly.

I believe that God Almighty has destined this country of ours to be a great example to the World. In this the hour of our triumph in arms upon sea and land, in the dark days of reconstruction that follow all great wars, let us once again seize the Torch of Liberty, hold it on high, showing the World that we can be as great in Peace as in War, because we have learned reverence and respect for the Law. When we shall have risen Phoenix-like and performed this, our solemn duty, actuated by the spirit of Bunker Hill, the endurance and patriotism marked by the bloody snows of Valley Forge, then the men in Blue and Grey who sleep beneath the sods of their native land; the Khaki clad lads whose heroism and supreme sacrifice made a world peace possible, will rest row by row beneath the poppies red and the lillies white, confident and satisfied that they died not in vain; but that the loyal Americans of this and future generations will always strive under law for the highest type of Democracy—that of American Citizenship. To you and me, loyal medical brethren of this Noble Commonwealth, will fall this duty. Will we shrink, will we hesitate, will we fail? Never.

CURRAN POPE.

Duplication in Human Spermatozoa.—Tattersall's patient was a man, 25 years of age, suffering from spermatorrhea. The greater number of spermatozoa were normal, but in a few instances one head was furnished with two distinct tails. The tails were quite separate and distinct as far forward as the posterior end of the middle part, with which they join. The proportion of two tailed to normal sperms was about 1:750. A second type of abnormality was also observed. One or two spermatozoa were furnished with two heads and one tail. No abnormality was found in the sexual history of the man's family. There has not been a marked preponderance of one sex among the children born, nor has there been an instance of twins or abnormal children for two generations back.

Placenta Previa Plus Eclampsia.—Brihuega's patient had only recently recovered from influenzal pneumonia at the seventh month of pregnancy. It had been treated with mercuric chlorid by the vein and the following month profuse hemorrhages and eclampsia compelled premature delivery. The child was born in asphyxia and died in two hours.

ORIGINAL ARTICLES

POSTERIOR PITUITARY SECRETION IN THE TREATMENT OF MITRAL REGURGITATION.*

By R. ALEXANDER BATE, Louisville.

Regurgitation of the blood, from the left ventricle into the left auricle, during systole, takes place in any condition which prevents perfect closure of the mitral valve. Post-mortem examinations have demonstrated the fact that the majority of regurgitant murmurs are permitted by myocardial changes. It is a universally accepted fact that myocardial hypertrophy compensates for the valvular deficiency. So long as compensatory hypertrophy obtains no systemic symptoms of mitral insufficiency are observed; hence, the treatment of mitral regurgitation has been based upon the establishment and maintenance of myocardial hypertone.

It has been shown that the blood regurgitating into the left auricle, while the right ventricle is pumping blood into the lungs, causes congestion of the pulmonary capillaries and dilatation of the right auricle. This is due to increased pressure in the right auricle where lowered pressure is normal during systole; hence, cardiac dyspnea, which is one of the first symptoms of mitral regurgitation, is the result of the pulmonary engorgement.

Hirschfelder, following von Basch, reasons that "the pulmonary stasis does not persist when the action of the left ventricle is sufficiently vigorous;" hence, he says, "in the milder cases shortness of breath may be absent." Loomis, with much greater precision, states "so long as the hypertrophied right ventricle is able to fully overcome the abnormal pressure of the blood in the lungs, from mitral regurgitation, the patient is comfortable.

By and by cardiac hypertrophy is followed by myocardial degeneration and dilatation. General venous congestion now may be observed. As the lungs first indicated the primary vascular changes, so the blood enmeshed liver now indicates the secondary changes, which involve all the abdominal viscera. The renal, gastric and other symptoms result from visceral engorgement, just as dyspnea results from the pulmonary dilation and degeneration.

The investigations of the McChord, of Ann Arbor, published in 1911, together with many other confirmations since, have shown that posterior pitnitary secretion constricts dilated blood vessels wherever present. The peri-

*Read before the Jefferson County Medical Society.

pheral, renal, splenic, hepatic, coronary, pulmonary, leg, and even embryonic vessels, were especially tested by McChord. He thus summarizes: "These experiments show that the posterior-pituitary extract acts on all the vessels of the body,—with repeated administration there may be repeated constriction of the blood vessels."

It has been shown that posterior pituitary secretion diminishes the size of the heart and slows its rate of action. The heart is strengthened. The pressor and the depressor action of pituitary principle is personally believed to be evidence of the autacoid effect of the posterior pituitary principle upon the various endocrinous glands.

It has been shown that the heart has its own independent working system, since it has been made to act for days without any connection with the central nervous system. It is suggested that this independent action is probably controlled by the posterior pituitary autacoids.

Sajous has shown conclusively that the action of digitalis is entirely due to its effect upon pituitary secretion. Posterior pituitary secretion has all of the good effect of digitalis without ever being contraindicated by heart block, toxemia, or from any cause whatever. Posterior pituitary principle in mitral regurgitation, then, is indicated because:

(1). Its autacoid affect upon the heart produces cardiac excitivity, excitability, conductivity, contractility, and tonicity.

(2). By its action in preventing and overcoming venous dilatation throughout the entire system, especially the thoracic and abdominal viscera, by these means compensating and entirely correcting any valvular deficiency.

The following prototypes each represent many cases observed:

(1) Gladys M., aged seven years, developed acute severe chorea following purpura hemorrhagica. Endocarditis (mitral lesion) was a sequel. The sad syndrome of mitral insufficiency in childhood followed. Posterior pituitary principle was administered by the mouth from then to the present time—five years. The child is now unusually strong and well developed. The murmur is quite perceptible but perfect compensation exists.

(2). Another girl, aged thirteen, from the same school as case No. 1, gave a history of chorea following a terrifying interview with her female teacher; exophthalmic goiter also developed after this fright. The trouble had existed eighteen months when the patient was first observed. Mitral regurgitation was found to be the cause of the pulmonary congestion which was so marked as to have aroused alarm, in the family, as to the possibility of tuberculosis. After a year's exhibition of posterior pituitary principle, the chorea, the tachycardia of thyroid origin, and the pulmonary engorgement, had all subsided. The girl left the city in July. During the summer she was given typhoid vaccine. The pituitary was withheld by the doctor, because he had never used it except in obstetrical cases. The child returned to Louisville in September. Fever, cough, bloody expectaration and pulmonary engorgement caused great dyspnea, and there was edema of the extremities. The mitral lesion had caused progressive changes throughout the entire vascular system; albuminuria, no tubercule bacilli, confirmed the physical findings. The child died. I believe withdrawal of the pituitary extract permitted the progression which terminated life.

(3). A business man, aged sixty-five, presented himself complaining of shortness of breath, disturbed digestion, and urinary manifestations. Mitral regurgitation was evident, together with arteriosclerosis. Five years treatment with pituitary extract has caused the murmur to disappear.

(4). A youth of eighteen, came to me suffering from shortness of breath, or "giving out" in his athletic sports. He had a systolic murmur perceptable posteriorly, etc., which disappeared in six months under pituitary extract (posterior).

I am quite sure many cases of "rheumatic" endocarditis have been supported to compensating periods by posterior pituitary extract under my observation. I feel that I cannot too heartily endorse its use.

DISCUSSION:

C. H. Harris: I would like to ask Dr. Bate what other form of treatment, if any, he used in the cases reported; also whether or not the patients were placed in bed.

R. A. Bate: The child with acute chorea had to remain in bed for a time because of extreme exhaustion. The business man was never placed in bed. Other methods of treatment were also employed in all the cases, such as laxatives when required, regulation of the diet, etc. The pituitary substance was continued throughout, and I attributed the final results to this agent. When administered three times daily, the average dose of pituitary substance is three drops an hour before meals. It should be given in a full glass of water. In some cases I have administered it every four hours. In the child who has been under observation five years, I started with one drop and after a few weeks increased the quantity to three drops; then later reduced it to two drops twice daily which she is now receiving.

C. H. Harris: Of course Dr. Bate is held in

the highest esteem by the members of this society, and especially by myself; but I wish to express some doubt as to the therapeutic value of pituitary substance in mitral lesions.

We have been taught that mitral regurgitation occurs because of inability of the mitral valves to approximate themselves during active systole. Unless compensation occurs the blood is "dammed back" in the left ventricle and forced into the pulmonary structures; therefore pulmonary engorgement is one of the first results of mitral regurgitation; renal and splanchnic engorgement are later effects. The chambers of the heart are continually filling and emptying; this is the phenomena we describe as the cardiac rhythm; the heart rests three-tenths and works seven tenths of the time. Under ordinary conditions the cardiac mechanism has a certain amount of reserve force which can be called into use.

Whenever anything causes a "damming back" of the blood, this necessarily interferes with the myocardial structures and there develops in consequence either tachycardia, bradycardia or arrythymia. Under such circumstances what should be done? First, and most important, is to put the patient to bed. The heart can pump blood in the horizontal to much better advantage than in the perpendicular plane, and by keeping the patient in the recumbent posture the heart has less work to do and compensation is favored. However, compensation will depend entirely upon whether there occurs an hypertrophy of the left ventricle. If myocardial changes interfere with nutrition of the left ventricle there is no compensation. Heretofore in lesions of this kind we have given digitalis, which we have been taught acts through the pneumogastric upon the cardiac muscle "slowing the engine and bringing it into balance," increasing the power to force blood through the coronary arteries and thus furnish nutrition to the heart muscle.

If Dr. Bate had secured the results stated in the cases he has reported without keeping his patients in bed, I might be inclined to believe his pituitary story. We must remember that valvular defects producing systolic murmurs are the least serious of all cardiac lesions. As an example I might mention that twenty-five years ago I was unwise enough to tell a mother that her daughter "had a systolic murmur and was likely to drop dead any minute." That patient is still living; of course she still has a systolic murmur masking the first sound of the heart, but nature has produced compensation and she is comfortable.

Dr. Pate has told us a beautiful story about the beneficial effects of posterior pituitary substance in mitral lesions, and I am sure we have all enjoyed it immensely.

S. C. Frankel: It is my impression that when administered internally the activity of pituitary substance is destroyed by the gastric secretion; but if given on the tongue and absorption secured in that way the proper action is obtained.

Where there is imperfect closure of the mitral orifice, I do not understand how the lesion can be completely cured with any form of medication, i.e., if there is regurgitation of blood through the mitral orifice because of a valve which does not completely close the opening, the lesion is organic and I do not see how it can be cured by medication.

R. A. Bate, (closing): Mitral murmurs are the most common of all cardiac abnormal sounds. Of fifty cases investigated by Professors Earp and Alburger, where cardiac murmurs had been diagnosticated during life, in only one was a valvular lesion demonstrated at necropsy. Loomis claims that in many instances cardiac valves shown to be apparently normal post-mortem will not stand the "water test," the condition of the heart muscle being such that the valves close imperfectly although anatomically no abnormality is shown. Of course where there is a vegetative ulcerative or degenerative lesion of the valve, the defect is permanent.

In many instances the completeness of valvular closure depends upon tonicity of the cardiac muscle. Regurgitation of blood occurs because there is insufficient force in the heart muscle to produce closure. It has been repeatedly demonstrated at necropsy that the greatest number of mitral murmurs are the result of imperfect valvular closure from lack of tone of the cardiac muscle, and it is in this class of cases that the murmur usually disappears under treatment. I do not mean to say that an organic lesion can actually be eliminated by the method of treatment I have recommended, but in any case where the murmur is due to lack of muscular tone benefit will be secured. This has happened in many cases coming under my personal observation.

Hirschfelder and von Basch are in accord with the position taken by Dr. Harris, i.e., that the lesion is overcome by the left ventricle. I think, however, that Loomis' explanation is much clearer; he says that so long as the right ventricle is able to overcome the abnormal pressure of the pulmonary engorgement as a result of the mitral regurgitation, the patient remains comfortable. In other words, compensation depends upon the ability of the right and not the left ventricle to take care of the accumulated blood; it is in this way that pulmonary engorgement and dyspnea are prevented or overcome.

In regard to the action of posterior pituitary substance when administered by the mouth: I do not know why the idea prevails that the pituitary or any other hormone is digested; certainly we have nothing to justify such an opinion. Harrower and many others have shown that pituitary substance is effective when administer-

ed internally, and I have confirmed this fact in numbers of instances. Only in obstetrics and in cases of sudden collapse have I used it hypodermatically. Adrenalin is popular hypodermatically, but the suprarenal substance I almost invariably give internally.

When compensation fails from overwork of the heart muscle, or lack of nutrition as Dr. Harris suggests, then dilatation and degenerative changes may be expected to ensue. The posterior pituitary substance not only strengthens the heart but lessens its size, prolongs the period of rest, and corrects the arrythymia; it increases the working ability of the heart, strengthens the heart muscles, and increases their tonicity. This has been verified as every portion of the heart muscle has been tested, individually, by McChord and others. The posterior pituitary substance particularly affects the ventricular structures and maintains their nutrition. It aids oxidation, increases the hemoglobin content of the blood, stimulates the endocrinous glands, and adds tone to every portion of the body. The extensive experiments of McChord have demonstrated that wherever dilated veins are present the contracting effect of pituitary substance may be noted. Congestion is thus overcome and dyspnea relieved. This applies to vascular dilatation and congestion wherever present.

When we compare the action of digitalis with that of posterior pituitary substance, we find that they are almost identical even to the so-called double effect, i.e., the power to contract and at the same time to dilate certain blood vessels. McChord and others have emphazised the pressor and depressor effects of pituitary substances. This double action is probably due to the autacoid effect of the pituitary principle on the endocrinous glands. First there is a stimulating effect upon the hormones, second a similar effect upon the chalones which in turn have a restricting action. The effects of the two drugs are therefore almost identical without any contraindications to the pituitary substance. Sajous has shown that the action of digitalis is due to its effect on pituitary secretion.

Clarification of Turbid River Waters with Alum.—The main conclusions reached by Raju as a result of his observations are that with increasing doses of alum there is a progressive improvement in the color and transparency of turbid water, until the point of perfect clarification is reached. In no case was any evidence obtained of a negative phase of alum; and in no case was any evidence obtained of the existence of a positive association between the alkalinity and the dose of alumn required. All the waters examined had, however, sufficient amount of carbonates to react with at least seven or eight parts of aluminum sulphate per hundred thousand.

DIAGNOSIS OF PRESENTATION AND POSITION AS AN AID IN THE CONDUCT OF LABOR.*

By Edward Speidel, Louisville.

The fact that 96 per cent of labor cases present by the vertex that fully 70 per cent of these are normal left occipito anterior cases, that practically deliver themselves, soon leads the busy practitioner to neglect some of the finer details in the conduct of his work and then he is chagrined to diagnose a breech when it appears at the vulva or perhaps a transverse when the hand protrudes from the vagina. With a knowledge of the correct position and presentation of the child the skilled obstetrician is in a position to safely and speedily deliver his patient just as the mariner who knows the channel, can guide his ship to port. Without this a patient is often subjected to hours of needless suffering, with the delay dangerous to both mother and baby.

Of the three means at our command for making a diagnosis, abdominal palpation is to me of most importance. This is described in many ways in the various text books. Only three simple manouvers are necessary. The hands are placed over the middle of Poupart's ligament, the palmar surfaces pressing deeply toward the midline of the abdomen. The hard round surface of the fetal head is usually encountered there and should be readily recognized. When the patient is in labor, the experienced obstetrician will be able to determine the progress of the labor by the degree of descent of the head into the pelvis by this same manouvre. The second manouvre determines the location of the back and extremities. Placing the hands firmly at the side of the abdomen about the level of the umbilicus, one hand is pressed firmly against the side of the uterus, the other hand palpating the other side in an effort to distinguish the firm round surface of the fetal back. As it is most frequently on the left side, that area should be palpated first. The third manouvre, palpating the fundus, only confirms the findings of the first; if the head was found at the superior strait it would follow that the breech would be at the other end. It is in breech presentations, however, when the third manouvre, by definitely locating the head at the fundus of the uterus after its absence has been noted in the lower segment, is of most service and establishes the diagnosis. Locating and hearing the fetal heart sound should then confirm the diagnosis now made by abdominal palpation, and depending upon that diagnosis the obstetrician should know exact-

*Read before the Jefferson County Medical Society.

ly where to listen for the fetal heart sound with but little hunting around. In anterior vertex cases to the left or right about midway of a line running from the anterior superior spinous processes of the ilium to the umbilicus. In posterior cases the heart sound should be heard toward the back below the umbilicus either to the right or left according to the position. At times in right occipito posterior cases it will be possible to hear the fetal heart at the left anteriorly in the location of a left occipito anterior, but confidence in your abdominal palpation should lead you to listen at the right posteriorly and if heard there that will clinch your diagnosis.

A fetal heart sound from a right occipito posterior may at times be transmitted to the left anterior, but the fetal heart sounds of a left anterior are never transmitted to the right posteriorly. In breech presentations the fetal heart should be heard at the level of or above the umbilicus. This is not always the case in actual labor. I have often heard it below the umbilicus. In face and transverse presentations the location of the fetal heart sound is equally unreliable and no definite confirmation of the diagnosis can be reached by that.

The diagnosis by vaginal examination is usually unnecessary and is being discarded more and more by those experienced in abdominal palpation.

The location of the fontanelles is difficult in the early stage of labor on account of the insufficient dilatation of the cervix. In the later stages it is often impossible on account of the presence of a caput succedaneum. In all cases it subjects the patient to unnecessary vaginal examinations, that may lead to infection. It is perhaps in the abnormal cases the breech, the occasional face and transverse presentation, that the absence of the hard, round surface of the occiput by vaginal examination first puts us wise to the fact that we are not dealing with the usual vertex presentation. The following cases seen in consultation should prove the advantage of closer attention to diagnosis in delayed labor cases.

A primipara, 16 years of age, was seen at 1 A. M., after having been in severe second stage labor for three hours. Inspection showed the uterus directed well toward the right side of the abdomen. Abdominal palpation disclosed a right occipito posterior, the fetal heart strongly heard below the umbilicus and in the right flank, confirming the diagnosis. Upon vaginal examination the head was found in mid pelvis with the large fontanelle directed towards the left acetabulum, showing that no rotation of the occiput had as yet occurred. The patient was having frequent and very violent pains and in the next pain with the patient in the dorso-sacral position pressure upwards and backwards toward the left sacro-iliac synchondrosis was made with two fingers fixed at the large fontanelle. The head was brought to the transverse in that way in a few pains, then the patient was turned to the left lateral position and in the next few pains rotation of the forehead into the hollow of the sacrum and of the occiput under the symphysis quickly followed. Descent of the head with distention of the rectum and perineum occurred at once and in a few minutes a condition that had hung fire for several hours was safely terminated for both mother and child.

The next case seen at 7 P. M. had been in labor since 2 A. M. with no progress. Abdominal palpation and the fetal heart sounds indicated a left occipito anterior. Vaginal examination showed the cervix fully dilated with the bag of waters ruptured and a firm mass in mid pelvis. I could not at first make out any distinctive points but it finally dawned upon me that I was dealing with a face presentation and the mouth was located in front and to the left indicating a left mento anterior. A mid forceps operation was necessary to terminate this case. According to the text books it should have been possible to diagnose this case by abdominal examination by feeling the unusually rounded prominence of the elongated occiput on the right and posteriorly, contrasting with the small flat area of forehead palpable on the left side. In actual practice with a case that has been in labor nearly twenty hours such a distinction becomes difficult, if not impossible. Unfortunately the fetal heart sound in face cases tends to mislead one also. As it is heard through the chest of the child it is in the same location in a left mento anterior, that one would find it in a left occipito anterior, hence the excuse for the tentative diagnosis made by abdominal palpation in this case.

The next was a case of frank breech presentation, diagnosed as a breech by the attending physicians. The patient had been in severe labor for 12 hours when seen. The fetal heart could not be heard. Vaginal examination showed the buttocks firmly wedged in the upper part of the pelvis. A presumptive diagnosis of single or frank breech presentation, that is with both legs extended along the front of the child, was made. It is claimed that in ideal circumstances it should be possible to palpate the extended legs along the front of the child's body by abdominal palpation. The writer admits frankly, that he has never been able to do so. The diagnosis should be made when a breech presentation that has descended part way into the pelvis

fails to make further progress in spite of good labor pains. In such cases the legs extended along the front of the child's body act as a splint and effectively prevent the lateral flexion of the body, which is an essential manouvre in the delivery of a breech presentation.

In a primipara, with a living child, the writer would advocate Cesarian section in such a case. In this instance as the fetal heart sounds could not be heard vaginal delivery was conducted as follows: Under surgical anesthesia the left hand was introduced into the vagina, the buttocks pushed upwards and to the left, an assistant pushing the body of the child to the right. This was extremely difficult as the uterus was firmly contracted down upon the child and the buttocks were well down in the vagina. The hand was then slipped through the cervix, a thigh was reached, the leg drawn to the side until a knee could be reached, the leg then bent down until a foot was grasped and the foot drawn out of the vagina.

Knowing that a laceration would be inevitable in the course of the delivery, the perineum was incised in the median line, nearly down to the sphincter. A dead baby was shortly after delivered by the usual manouvre for a breech presentation with a laceration of the sphincter however, in spite of the precaution taken. Primary repair of the sphincter and perineum were performed with perfect success, the patient leaving the infirmary in good condition.

The next case was a very unique one, a primipara, 31 years old, who had been in labor for 36 hours, in spite of good pains. The abdomen was pendulous, the uterus hanging far forward through the space between the rectus muscles. A number of nodules could be easily felt on the anterior wall of the thinned out uterus, that at first were mistaken for fetal extremities; both sides of the uterus were firm and nothing definite could be determined there by abdominal palpation. Fetal heart sounds could be heard in several areas but I could not determine whether there was a twin pregnancy or whether the heart sounds were transmitted through fibroid areas as I had observed in other cases of pregnancy associated with fibroid tumor. Vaginal examination showed the cervix fully dilated with the membranes ruptured and the vertex presenting at the superior strait. The patient was placed on her back, the uterus held in the center of the abdomen with a large towel bandage, and as there was still no progress, after a number of severe pains, a high forcep operation was performed. The uterus then showed the presence of another fetus. After an interval of a half hour the bag of waters was ruptured and a breech delivery of the second infant followed, both being born alive. Examination of the mother later on showed a fibroid tumor with well marked nodules on the anterior wall.

The last case, a primipara, was in labor since 2 A. M., the diagnosis of left occipito posterior having been made by the attending physician and an attempt at a forceps delivery having been made about 1 P. M., without success. Abdominal palpation and the fetal heart sounds confirmed the diagnosis of left occipito posterior when the patient was seen at 3 P. M. Upon inserting the full hand under surgical anesthesia the large fontanelle was found toward the right acetabulum showing that anterior rotation had not taken place. With the attending physician pushing the body of the child towards the median line with his hands upon the left side of the abdomen and simultaneous rotation of the head forward to the left acetabulum with the hand in the vagina a favorable position for delivery was secured. The head then being in mid pelvis the axis traction forceps were applied to head in the oblique diameter. Traction was at first made downward and backward with the handles of the forceps pointing toward the left thigh of the mother and then directly forward when full rotation had occurred. An easy delivery resulted with a living child.

These cases should illustrate the desirability of making a diagnosis of presentation and position early in the conduct of labor cases so that in case of delay in the delivery intelligent measures can be used to effect a delivery. When called late to a case it is often impossible to make a diagnosis because the bag of waters has been ruptured for some time, the liquor amnii has drained away, and the uterus has firmly contracted down upon the fetus, obliterating the landmarks upon which such a diagnosis depends. On the other hand this is offset by other advantages that ensue. An hour or more may pass before a consultant arrives upon the scene and in the meantime continued pains of the mother may have brought about a more favorable position. Again when the consulting obstetrician performs his manipulations he has the patient under surgical anesthesia and has the intelligent assistance of the attending physician and so can often complete a delivery with apparent ease, which the attending physician alone and unassisted, naturally could not accomplish.

DISCUSSION:

C. G. Forsee: I would like to ask the essayist upon how many occasions he has made the diag-

nosis of one position, say ten days before delivery, and at the time of labor found the child occupying an entirely different position; in what percentage of cases has that occurred? I wish he would also tell us in what percentage of instances he has failed to detect the fetal heart sounds although the babies were alive.

C. H. Harris: I have learned from my experience in obstetrical practice that the best men may be mistaken in diagnosing the position of the baby in the mother's pelvis. I have oftentimes been mistaken myself, and have seen many others make similar mistakes. I never blame a man for making an error in diagnosing the position of the baby before labor. I am led to make this statement because one of the best obstetricians in this state, a man who has devoted his entire life in the profession to the practice of obstetrics, made a mistake of this kind in one of my cases. I was called to see the patient after she had been in labor several hours, and made the diagnosis of an L. O. A. position by external palpation, the fetal heart sounds, and other methods in general use. However, there was some delay in delivery and another doctor was asked to see the patient in consultation. He thought there was a posterior position, and I remember having remarked at the time "if there is a posterior position in this case I am going to quit the practice of obstetrics!" He finally delivered the woman of a dead baby which was found in the L. O. A. position. The doctor insisted upon a Cesarian section, and I have always regretted that the operation was not promptly performed as in that way we might have delivered a live baby.

The best of us may be mistaken in the diagnosis of the position of the child in the pelvis. I have always depended largely, as Dr. Speidel has stated, upon external manipulation and location of the fetal heart sounds in making the diagnosis,—but it must be remembered that the fetal heart sounds may sometimes be transmitted in the wrong direction. However, the most important feature upon which I have depended for the diagnosis is the location of the fontanelle. There is only one suture leading therefrom, and if the head has not become misshapen by prolonged pressure this suture can usually be located. Whenever I fail in doing this I anesthetize the woman and insert my hand into the uterus to determine the position of the baby. Dr. Speidel may condemn introduction of the hand into the uterus to ascertain the position of the child, but I have found it necessary on several occasions.

I have never lost a baby because of a breech presentation. I have delivered living twins in this position from two to ten hours apart without trouble. I always place a bandage through the groin in delivering the first child; in only one instance have I used an obstetrical hook. I always take the precaution to have my vertex forceps ready and if the head becomes impacted at the pelvis brim the forceps can be quickly applied and the head safely delivered.

In closing the discussion I wish Dr. Speidel would tell us something about the dangers of compression of the vertex producing Little's disease.

R. A. Bate: Every pregnant woman should be carefully examined to determine the position of the child before and at the time the obstetrician is called upon to effect delivery. I recall two cases in private practice where the babies undoubtedly changed position within three or a few days before delivery; in both instances the woman had been examined four days previously and the position in both was apparently a normal L. O. A. or O. D. P. However, in both cases a breech presentation was found!

I always listen for the fetal heart sounds in trying to determine the position. I place more reliance on the position as shown by the fetal heart sounds than the information obtained by palpation. I see no objection whatever to careful internal and external examination with proper aseptic precautions. There is no danger to the mother, and I see no reason why vaginal examinations should not be made whenever necessary. I was surprised that Dr. Speidel did not mention version in abnormal positions of the child during labor.

The most difficult delivery I ever saw was a shoulder presentation. Five doctors, some of them being excellent obstetricians, saw the patient and delivery of a shoulder presentation could not be accomplished. The late Dr. Ap Morgan Vance was finally called to deliver the woman at the hospital, and it was a revelation to see the ease with which delivery was effected by version after morcellation. With his bare hands morcellation at the shoulder of the dead fetus was effected.

We should always be prepared to apply forceps if necessary in breech presentations. In most cases the difficulty arises when the head becomes wedged in the superior strait. Unless evidence of compression of the cord is present, I can see no reason for haste as the child is still being nourished through the placental vessels just as if it were entirely inside the mother.

Edward Speidel, (closing): As a general thing the obstetrician makes his final preliminary visit about two weeks before labor and the diagnosis of the position of the child is then made. I recall one case in the wife of another physician in which two weeks before labor I was certain there was an L. O. A. position; but when called to deliver the woman to my dismay I found a breech presentation. I am certain the position of the child changed during the two weeks interval. There may be a change in position any time be-

fore labor, but the frequency with which it occurs is unknown.

It is a well-recognized rule, and a very good one, that delivery should be terminated after the patient has been in the second stage of labor with good pains for about two hours; the experienced obstetrician generally waits less than two hours. If I find no progress is being made in the second stage of labor with good pains, I am very apt to use forceps. It is questionable whether the same after-effects may not be noted in after life from use of forceps as if second stage of labor is allowed to continue with a non-advancing head for a longer period of time. The after-effects are due to compression of the brain. Neurologists tell us in chorea, St. Vitus dance, epilepsy, etc., noted at the age of puberty, the patient often gives a history of forceps operation at birth. I believe forceps properly used with care to prevent compression is a much better plan than allowing the woman to remain longer than a reasonable time in the second stage of labor.

As to fetal heart sounds: I recall a case occurring in the Louisville City Hospital several years ago where I thought the fetal heart sounds were plainly heard, but at delivery a macerated dead baby was found. I used the mistake as an illustration to show the students the effect of making an erroneous diagnosis, explaining to them what would be likely to happen if I had made a mistake of that kind in private practice. In this case I thought I heard the fetal heart sounds and that the baby was alive; half an hour later when delivery was effected the skin of the baby was found macerated in several places showing that it had been dead for twenty-four hours or longer! It may be difficult to satisfactorily explain matters of ths kind, and since that experience I have been very careful in stating the fetal heart sounds are heard unless they can be counted separately and distinguished from the maternal pulse. I remember on one occasion having made the error of counting what I supposed were the fetal heart sounds; it never occurred to me that I might be counting the pulsations of the abdominal aorta. The mother had a temperature of 102 degrees F. and a pulse of 120; —it was the mother's pulse that I had counted! I mention these experiences to show how easily such mistakes may be made. However, if the fetal heart sounds are found 135 to 150, and the maternal pulse is also carefully counted, such errors will not be possible.

I think I can detect the fetal heart sounds in at least nine-tenths of cases if the child is living, as I have become accustomed to that kind of work. Those of us who do special work of this kind are perhaps better able to detect such delicate sounds than those who do not so specialize.

The particular point which I desired to emphasize in the paper was the advantage of early diagnosis of the position: In the first case reported, the girl aged sixteen years, it was surprising how quickly labor was terminated. I was called to see the patient early one morning, the family were very poor and no asepsis was possible, they did not even have a bath room, the bed clothes were dirty, etc., and the possibility of executing any complex obsetrical procedure was out of the question. By using the simple manouver explained in the paper delivery was quickly and satisfactorily effected. I have been astonished in a number of instances at the ease with which delivery has been accomplished in seemingly difficult cases. Not long ago I was called in consultation by two excellent physicians of Louisville both of whom are members of this society; it was a breech presentation and when I arrived the baby was hanging from the vulva of the mother, these two physicians having been unable to deliver the head. By inserting two fingers into the mouth of the child and two fingers over the neck, then making a rotary movement the head was immediately released much to the astonishment of the family and the two physicians. I am satisfied now that during the interval which elapsed between the time I was called and the time this manouvre was practiced some decided change in position of the head had occurred in this case.

Similar things sometimes happen when forceps operations are performed. I never resort to these obstetrical manipulations without having the patient under full anesthesia. With the patient anesthetized and the hand inserted into the vagina, the operator has conditions well under his control. With the assistance of another doctor and someone to administer the anesthetic, it is comparatively easy to deliver even complicated cases. Whereas, if one is alone, I do not care how good an obstetrician he may be, I do not believe he can effect delivery in difficult and complicated cases.

Case of Scorbutic Hematuria.—Dr. Percival J. Eaton, Pittsburg: This case occurred in a rather poorly nourished child fed on patent foods and then on cooked foods, but never on fresh, raw food. The child's condition seemed to point more toward scurvy than toward calculus, and the urine showed nothing abnormal except bright red blood. Fresh raw milk, beef juice and orange juice were prescribed. Under this treatment the hematuria disappeared, and it was not necessary to use the sound.

Vesical Sphincter After Prostatectomy.—A study of twenty-five cases convinces Watson that following perineal prostatectomy the internal or vesical sphincter returns to its normal tone and function in every instance within a few weeks.

ECTOPIC PREGNANCY.*

By G. W. Payne, Bardwell.

An ovum may be fertilized and remain at any point of its passage from the ovary to the uterus. The most common sites for this is the tube, its median or isthmial, its ampulary, its uterine or interstitial, portions in order named and lastly, the ovary. Pregnancy may occur in a closed accessory horn of the uterus or it may be a tubo-ovarian form. When the tubal wall bursts, the foetus escapes into the abdominal cavity or into a mass of pre-formed adhesions. We speak of tubo-abdominal pregnancy; if the rupture occurs in the lower portion of the tube between the folds of the broad ligament, an intra-ligamentis sac is formed. If the sac which is formed is an interstitial pregnancy bursts into the uterus (rare), it is a tubo uterine. If the ovarial pregnancy goes toward term, it almost always becomes ovario-abdominal. These are all secondary forms and clinically as well as anatomically, hard to distinguish from each other.

Extra uterine pregnancy is said to be quite frequent and that it occurs in animals. It is further stated that many cases of rupture of the sac, or tubal abortion occur, and spontaneous recovery undoubtedly follows and pass under the diagnosis of appendicitis or abdominal colic. It is more frequent in city than in country practice; oftener after the thirtieth year. The actual causes are unknown but the following are perhaps the most plausible, salpingitis, pelvic adhesions, infantile tubes with lack of cilia, external wandering of the ovum, diverticula and accessory tubes; decidual reactions of tubes, and diseases of the corpus lutum.

SYMPTOMS.

As a rule the patient misses a period and has some of the ordinary symptoms of early pregnancy. (In two cases I have had in the last two years, these symptoms were absent). Sooner or later, they will complain of pains in the lower part of the abdomen, especially on the affected side, cramp-like in character, due to tubal or uterine contractions. After a few weeks, irregular bloody vaginal discharges appear, which may be mistaken for a threatened abortion. After a sudden jar, strain, coitus, or too much pressure made on examination, a sudden and severe pain is felt on the affected side, the patient feels faint or dizzy and may vomit or be nauseated, your patient may be in a condition of shock, due to sudden distention of tube or an irritation of the peritoneum by blood, or to the great loss of blood. The pains continuing, a piece or all of the uterine decidua is discharged. A careless attendant will now conclude that the abortion has taken place. These symptoms may indicate that a hemorrhage has occurred in the tube or through it into the belly, or that a rupture of the tube has taken place. The first hemorrhage is hardly ever profuse enough to cause death. Clotting occurs at the site of rupture and the blood is absorbed, the acute symptoms may subside in a few days, the whole process terminating in three to six weeks, or the clot may be disturbed or blood pressure raised, the hemorrhage commences in a few hours or days again and the patient may die from anemia or from a second or third hemorrhage. By way of recapitulation, I want to emphasize the symptoms of the rupture of the sac, pain on the affected side, sometimes excruciating and sudden, not always severe, slight in my two cases, soon spreading all over the lower abdomen, nausea, sometimes vomiting, may be a diarrhoea, plus evidences of hemorrhage and shock, pulse as a rule accelerated. Vaginal examination, when the blood is fluid, will reveal nothing but a large uterus, later when the blood is clotted and the hematocele has formed, you can outline the mass in cul de sac or laterally. If it ruptures into the broad ligament, the hematoma forming here, the pain is most intense and shock is severe due to the separation of the layers of the peritoneum. If the rupture occurs more gradually, the symptoms are less severe and the condition may not be recognized. The two cases I have had were of the same type, monthly periods regular, none of the usual signs of pregnancy came out in their history. I was called in these cases because of slight colicky pains in the lower part of the abdomen and occasional hemorrhage from the vagina; their pulse ranged from 72 to 86, temperature was normal in case 1 and reached 99½ in the second case, slight nausea, slight perspiration and a slight fainty feeling. There was practically no shock in either case and no severe pain at any time, there was no palor or air-hunger. On vaginal examination you could feel a mass to the side of the uterus which proved to be clotted blood when the abdomen was opened. One case was operated on fourteen days after first symptoms appeared and the second seven days. In both cases the tube was ruptured. They made an uneventful recovery.

After the ovum escapes into the peritoneal cavity, or into the broad ligament, and if it continues to develop, symptoms of peritoneal irritations arise, pain, nausea, vomiting, soreness, diarrhoea or constipation, irritation of the bladder, loss of strength and invalidism.

*Read before the joint meeting of the Carlisle and Ballard County Medical Society.

The symptoms of pregnancy continue, foetal movements are more pronounced, are painful and a tumor in the belly grows as she progresses. If the foetus dies the symptoms of pregnancy disappear while those made by macerating neoplasm become noticeable, due to a toxemia, sub-normal temperature, rapid pulse, anorexia, coated tongue, loss of weight and icterus. Icterus with fever denotes decomposition of sac and contents.

It is occasionally hard to make an accurate diagnosis of true abdominal conditions, yet we can make a surgical diagnosis. When we have done this, have your patient operated on and make your diagnosis after the abdomen is opened.

TREATMENT.

There is no expectant treatment. If the diagnosis is made before rupture of the sac, or during tubal abortion, remove the ovum by laparotomy. If the pregnancy is advanced beyond the fourth month, DeLee says, it is best to operate before the child is viable. If rupture of the sac, with intra-peritoneal hemorrhage, is diagnosed, operated at once. If the primary hemorrhage has ceased, the patient recovering from the shock, it is best to wait a few days but place patient in a hospital so she can be operated on at the first symptoms of hemorrhage.

THE MANAGEMENT AND CARE OF THE NORMAL INFANT THE FIRST TWO YEARS OF ITS LIFE.*

By C. C. Carroll, White Mills.

The physical development of all individuals is primarily dependent upon three factors, first, inheritance; second, environment or surroundings; third, food. Until better eugenic laws are placed upon our statute books giving the physicians more authority to say who shall and who shall not beget children or until a clean bill of health, so to speak, shall be obtained from an intelligent board of physicians before a marriage license shall be issued, the first of these three factors is by no means within the control of the physician. With intelligent people of reasonable means, the second factor, surroundings, is largely within his control and the third, food, practically entirely so. Now to my mind the period of life during which the above named factors play the greatest part is up to the third year. We by no means, however, claim that the entire foundation for a perfect physical development is entirely completed during this time, but so much it seems is accomplished that it is very donbtful if any imperfect development of these first two years is ever entirely corrected. Now we will depart somewhat in our little paper from the usual line and instead of writing about a sick baby we will take a normal, healthy infant and begin with him immediately after the completion of the second stage of labor, or immediately after he is expelled from his mother's womb. The first thing we will take up is the establishment of a perfect respiration and thereby a perfect circulation since we believe a perfect circulation is by no means entirely dependent upon a perfect functioning heart and blood vessels and etc., but also upon the perfect inflation of the air cells of the babe's lungs. In order to get a good respiration we first remove every impediment to the air passages possible. The mouth and nose should be freed of all liquor amnii and mucus or blood clots, or anything with which these passages may have become obstructed during the passage through the birth canal. It is important that these passages are freed before attempts at respiration is possible in order that no foreign matter may be drawn into the lungs or bronchi thereby causing trouble if not strangulation. At this time much can be done with a nice soft cloth to lessen the work of the nurse in cleansing the child's body. By gently and thoroughly rubbing the child's body much of the vernix saseosa can be removed and at the same time this rubbing will stimulate the respiration and circulation. If this procedure is properly done the time of the bath will be much shorter thereby saving much chilling of the child. We hardly think too much stress can be placed upon the avoidance of chilling our babies during the first bath for the shock of this to the nervous system will no doubt produce much of the indigestion and resulting colics, co-called three months colic and six weeks colic. When these colics take place we all know too well the innumerable number of decoctions and teas with which these unfortunate little victims are drenched, and these things still increase the digestive troubles until these little ones are in a sad plight. The next thing in order should be the careful attention of the eyes. It might be well if we, like the kitten or some of the lower animals, were born with our eyes securely sealed up but since this is not the case and there is no longer any doubt that our eyes are sometimes infected during birth and the disastrous results we too well know, it is well that we give the removal or at least destruction of any and all organisms with which the child's eyes may become infected, very serious consideration.

A one time we thought that the ophthalmia in the new born was only due to the gono-

*Read before the Hardin County Medical Society.

coccus infection but in recent years we are told that while this agent is by all means the most serious infecting agent at this time it is by no means the only one. Boric acid solution or one or two per cent nirate of silver solution seems to answer well as a disinfecting and cleansing agent for the eyes. If we have reasons to suspect infection of a septic type in the mother the boric acid solution should be used in the child's eyes three or four times per day for at least two or three weeks after birth. If what the eye men tell us is true and we, by neglect, permit one individual in a life time to spend his days in darkness when the above means are so easily carried out, we cannot think of anything more disastrous. We think our present law requiring physicians to report at once all cases of ophthalmia neonatorum is an excellent one, but the best feature in this law is the requirement of the use of the nitrate of silver solution in the eyes of all new born children.

The next thing demanding our attention is the dressing of the cord. There has been much said and written in late years about the handling of the cord. A few years ago we read a great deal in the medical journals about not ligating the cord—merely pinching or tearing it in two after the manner of the lower animals. The advocates of this method claimed that the blood retained in the umbilical vessels by the ligature produced infantile jaundice, and also a mild systemic infection from disintegration. We do not think this method of dealing with the cord ever went into general use and we have not heard much said about it lately. Again the cord has been dissected off at the juncture of the skin and each of the umbilical vessels ligated separately. This may have been a very nice way of dealing with it, but it seems to me it is entirely too complicated for the average practitioner to use and especially too much for the average nurse or mother to care for after it has been done. The cord has also been cut from four to five inches from the umbilicus and passed through a greasy rag with a hole burned in it and securely folded over the cord which had been previously ligated, and the whole mass bound up with an abdominal band and often very tight. In some neighborhoods they point the cord up towards the chin, while in others the child did not do well unless the stump of the cord was pointed downward. This method of dressing the cord is an abominable fogy practice and cannot receive too much condemnation from the physician. In the first place these cord stumps should not be left four or five inches long for reasons of antisepsis. Does it seem reasonable to bind a sloughing or decaying mass tightly or even loosely to the child's abdomen? We say no. This idea of leaving the cord four or five inches long and placing the ligature well towards the distal end seems to have been adopted in order to prevent including the bowel in the ligature in case of an umbilical hernia and before asepsis and antisepsis was much thought of, but it seems to me that the average physician can with the tip of his index finger make an examination of the umbilical ring and determine whether there is present any umbilical hernia or not. We have always thought that we could tell whether there was anything except the normal vessels passing out of this ring. Those broad abdominal bands are not the proper bands even if we had umbilical hernia, nor are they the proper ones to prevent it. It was once thought that the abdomen and spinal column required such a band for their support, but if the child is normal we do not need them for this purpose. They obstruct respiration which means faulty oxidation and aeration of the blood which prevents proper growth and development of the child. It is also said that they obstruct portal circulation and prevent normal intestinal peristalsis and often produce icterus neonatorum. If we will lay a normal infant on his back and study his respiratory movements we will note that they are mainly abdominal and we can readily see that these tight bands are great obstruction to them. These bands are often kept on tight after the cord has fallen off and the friction and pressure may cause excessive granulations around the naval.

We have dressed the naval for several years as follows and never had any reason so far to change; First we examine to see if we have a normal umbilicus or any umbilical hernia by feeling of the condition of the ring and if we are in any doubt we make the child cry which will show up a hernia by protrusion, if present. After we have satisfied ourselves that we have present a normal umbilicus we knead or push back Wharton's jelly from the juncture of the cord and skin towards the placental end of the cord as much as we can easily do, then we apply a ligature not more than one-half or three-fourths of an inch from the red line of demarkation between the skin and cord, then we cut the cord 1-2 inch from the ligature and usually snap a pair of haemostats on the other end of the cord or tie a knot in it, or sometimes we use the second ligature on it. This we merely do to keep from being bothered by the hemorrhage and soiling of pads and beds, etc. We then dust well the stump of the cord left attached to the child with boric acid powder or salicylic acid and starch, one to ten, or some good borated talcum or any drying antiseptic powder. We

sometimes take an ordinary match and sear the end of the cord but if there is no hemorrhage and we have a good dusting powder we doubt this being necessary. Next we take a piece of absorbent cotton or clean cloth and wrap over the well dusted end of the cord and use the ends of the ligature which we purposely leave long and tie cloth or cotton firmly to the stump of the cord. We aim to mummify or dry this stump as soon as possible for we believe in a dry hard stump there is less danger of infection and it seems to me we have a condition similar to dry gangrene from which we do not fear, as in moist gangrene, systemic infection. Over this dressing we apply a very loose fitting band pinned to the shirt in front and back to hold it in place and from which we aim to get warmth and perhaps to better protect our dressing from the friction of the clothing. We are very careful in tieing the cord dressing as above described in order that we may not include any skin of the child's umbilicus as our cord stump is very short. We instruct the nurse to leave this dressing absolutely alone until dressing stump and all drops off after which keep the naval well dusted with boric acid or borated talcum. After having dressed the naval the baby should be snugly wrapped in some warm light, soft blanket, and laid away for several hours, if possible; but here is where a very serious mistake is often made, that is hurrying baby into the bath. If we will recall baby's recent surroundings where 100 degrees or upwards F. and the temperature of the average home is probably 60 to 80 degrees and wetting the body, or even a part of it, at a time and even with water as hot as can be well borne has a tendeney to cool the surface, we ean readily see how baby is often chilled, and we feel sure that the results of this chill or shock are often serious. The touch is no true guide as to whether the child is eold or not but so long as the palms and soles are purple baby is eold. It is hard to get fond relatives or neighbors to understand that baby should not be rushed into the bath and dressed until he has time to become accustomed to his new surroundings. When the lips or hands or feet are blue and the eirulation normal, showing this is not due to bad heart or lung action baby should be warmed by artificial heat until these parts become a normal, healthy pink.

After baby is several hours old he may be given the bath. We are sorry, though, that for want of an intelligent nurse we are often compelled to give him his bath mueh sooner, in order that it may be done under our guidance. The bath should be given with a soft cloth or sponge and as hurriedly as possible. The water should be kept up to 100 degrees, or a little hotter, and the room should be as near the temperature of the bath as possible. The bath should be given at least once a day, —best, in the morning. The temperature for the first six mouths should be about 98 degrees,—at one year 95 degrees, and during the second year gradually brought to about 85 or 90 degrees. Most babies by the second year may be given a eold douche or sponge and rub at close of the bath, but we sometimes find children who seem to be perfectly normal but who do not react after the bath. These should take only sponge baths and after the manner of the first year bath. A little salt or bicarbonate of soda, especially if baby's skin is delicate, should be added to the bath. Only very mild soaps should be used.

Soon after baby receives his first dressing and in fact for some days afterwards he is often the victim of too much handling and attention. This is especially true of the first arrival in a new family. It just seems like his friends can't wait to see what color his eyes or hair are going to be and whether he looks most like the father, mother, or some relative. Now in settling this matter it may take the opinion after much examining, of every mother in the entire neighborhood. This positively will not do and must, if baby has a fair chance to avoid much injury, be forbidden. As our work has been, mostly, among farming people, we usually ask them to take a lesson from the way old "sucky" takes care of her baby calf and how the old hog takes care of her new born brood, and after calling her attention to the fact that these animals have only God and nature, the wisest of the all wise to guide them at this time, we feel like we have learned this young mother, if she has any intelligence at all, a very valuable lesson. An infant, if normal, will sleep 18 to 20 hours out of 24, and deducting the time for the bath, nursing and necessary attention, there is no time for the loss of sleep and rest of all this unneecssary handling even if it was not injurious in any other way.

The clothing of infants has been changed a great deal in the last few years. Let us hope that the 5 or 6 foot dresses and skirts with which our mothers and fathers were clothed are gone forever. How could an infant, in these kind of dresses, have any chance to develop his limbs and abdominal and lumbar muscles by the moving and kicking of these parts? With the nice, soft foot dressings to be had now-a-days, baby needs his dresses and skirts to come only a short way below his feet and then only for the first few weeks of his life and in the winter season. It is very questionable whether he ever require mueh woolen flannels or not, except when very

young and in very cold weather. When the thermometer stands at 80 degrees and up wards the dress should be only a very light slip and a diaper for children of three months and older. Up until the last few years it was customary in a great many neighborhoods to keep baby in a blanket, and often a heavy one at that, skirts or girdle as a prevention of the much dreaded second summer complaint. This is no longer done and we hope never will be again. In the winter season the clothing should be warm but not heavy and of sufficient thickness to keep baby warm. It should in no way restrict the movements of the body and limbs and as the skin is very delicate care should be taken to use no irritating material.

This is the objection often found to woolen flannels and it is often best to use the soft cotton flannels. As a rule we think infants and young children are often over-clothed, especially while indoors and in summer. Many restless nights are the result of too much clothing or bed dressing. It seems that they do not require near the clothing that adults do. Care should be taken that the feet are kept warm and a hot water bag should be placed at the feet if not so, especially in early infancy, as cold feet are the cause of many attacks of colic. After all is said in regard to clothing, it is in this changeable climate of ours quite a question how best to meet its changes with proper clothing and really no set rule as to the kind and amount of clothing to be worn from day to day can be given. Often each child is a law unto itself. Watch the thermometer, watch the baby and use your own judgment is the only safe rule to follow.

The mouth and teeth should receive proper attention, even from birth At first cleanse the mouth with a soft cloth and plain water. After that it is best to cleanse it each morning with a solution of borax or bicarbonate of soda solution. The mother's breast, especially the nipple, should be cleansed with this solution several times each day and baby will not be bothered with any thrush. Usually after the first year the child has several teeth and more in process of eruption and these must be kept clean or they will soon decay causing a very great amount of trouble and harboring disease germs of many types.

The skin of young infants is very delicate and often the use of improper soaps and water and too much rubbing will produce inflammatory skin troubles. The folds of very fleshy infants, about the axilla and groins, are often hard to care for, especially in hot weather. They should be bathed often with a mild salt water and well dusted with a good antiseptic powder,—like borated talcum or stearate of zinc or bismuth and boric acid and talcum.

The genital organs of the female infant need little attention except ordinary cleanliness, but the male child should receive careful attention. We very often find and in fact it is rare that we do not find, a prepuce needing attention, there are usually adhesions and not a sufficient opening of the prepuce to permit retraction. A plan that we have followed for several years is to take a pair of artery forceps and anoint their points with sterile vaseline and slip them through the preputial opening and by opening the handles slowly stretch this opening until we can break up the adhesions and then retract the prepuce. We then carefully cleanse the glans of all smegma, and apply beneath the prepuce some of the vaseline and if any bleeding was produced we add to the vaseline a little boric acid powder. We instruct the nurse to retract the prepuce and repeat this treatment each day for several days. This if properly done will usually avoid the necessity of a circumcision later on. By the age of three month the infant should begin to receive training as regards the emptying of the bladder and bowels. At a regular hour, best after the morning bath and nursing or feeding, the infant should be placed on a small chamber and it is surprising how soon regular habits in this way can be established. Proctologists tell us that the great American evil,—constipation,— is largely a matter of habit, hence how important it is to train children from early infancy to establish proper habits as to the evacuation of the bowels. Proper habits as regards the bladder may not influence the future health of the child so much but adds very much to the ease of which it is cared for. It looks very bad to see a child of 2 or 2 1-2 years wearing a diaper because of the lack of a little training on the part of the mother. Again we often see some very annoying cases of skin troubles about the genital organs because the child has not been trained properly and often the mother is too busy to change its diapers as often as they are wet. Again many cases of that annoying disease, or we fear often a habit, bed-wetting, might be avoided by such training. With proper habits early learned a normal child of 18 months or two years, should have no trouble in holding its water eight or ten hours, unless given too much food or fluids too late at night.

Of all the organs that suffer most in child-life the nervous system bears the brunt. It is said the brain and nervous system grows more the first two years than all the rest of life, hence we can see why so many lasting impressions are made during this time. For the proper developing of these organs with

their much complicated centers, many of which we have a very poor understanding, is required a quiet, restful, and peaceful environment. The patriotic meetings may often be needed to arouse adults to do their duty but they are certainly no place for the baby. Romping and playing with the baby especially at night or just before bed time is a practice very much indulged in by parents and older brothers and sisters, but should be absolutely prohibited. Better wait until baby is 5 or 6 years old and it will be a good miss for him if he does not get it then. Many cases of night terrors are due to these romps and plays.

We wish we were able to present to you today two children of our little town, which is a little summer resort, and where all the excitement and stir and bustle that usually go with such places are present. The first child spent his first summer in these surroundings, his mother being engaged at one of the hotels. This child seemed to be a very well developed child at birth, but had all sorts of troubles during this summer. This mother moved to a farm and bore in the course of time another son and did not return to our town until this child was two years old and we wish it were possible for you to compare them. The mother is a perfect picture of health and the father is never sick. Neither of them appear the least bit excitable or nervous but not so with this older child which is now five years old. Will he ever grow out of it? We fear not. There is much more that we would like to say about these two little folks and about the early development of the brain and nervous system but as our paper is already growing too long, we will say no more on this part of it.

The sleep of the infant the first four to six weeks is rather deep, especially so for first two or three days and after long tedious labors. Such labors being common in young mothers, they often become alarmed that baby is sleeping too much and indeed this sleep is often of a semicoma type, but need not cause any undue fear on the part of the physician if there is no convulsions. This kind of sleep very often follows forceps deliveries, even when there is no brain injuries. After the first month children usually sleep lightly until two or three years of age, or later, when the deep, or so-called like a "log" sleep, is very characteristic of the healthy child. An infant should be trained to sleep 18 to 20 hours out of the 24 for the first six months, and about four to six hours less during the last half of the first and second year. It is best to train children to take a morning and afternoon nap of about two hours during the second year, or even longer. One very bad habit that infants often acquire is to take long naps in the day time instead of waking every two or three hours, for nursing and in this case they want to nurse too much at night. The child should we waked up and nursed every two or two and one-half hours during the day and not allowed to nurse more than twice during the night, when very young, and by the end of the first or second month once and by the sixth month not at all, but not getting his food during the day he is sure to want to nurse too much at night. The mother needs to sleep at night and not be waking up to nurse the baby and it is her fault if she does do it. Formerly children slept in cribs or beds with rockers and were accustomed to being put or rather effigurned to sleep by all sorts of jolting, rocking and etc. This is an unnecessary habit and should not be taught them. I have often seen the mother take the baby in her arms and get into a chair without rockers and proceed to jolt baby back and forth to get him to sleep and even after he had just enjoyed a full meal. Is it any wonder the baby had colic? Again, all sorts of devices, such as pacifiers, or even allowing baby to sleep at breast, should be prohibited. All baby needs or should be trained to need, to make him sleep, is a quiet, darkened, well ventilated room, an appetite well satisfied, dry diapers, and warm, cozy but not too warm bed, anything else, we fear, would be called a bad habit. There are usually only two causes for restless, disturbed sleep—hunger or indigestion. Hunger is the one usually in the breast-fed babies, and indigestion in the hand-fed babies. Where baby nurses for 20 to 30 minutes and then falls asleep to wake in 30 minutes to one hour with a cry as if in pain and the scales do not show at least a gain of forty ounces per week, you had better examine the mother's breast. We often make an error in taking it for granted that baby is well-fed because his mother's breast looks large and full at a casual glance, when just the opposite is true. In fact, it is the small conical breast that is best for the baby. And the best time and only fair time to test the mother's breast is while the baby is nursing. While baby nurses one breast examine the other and note the secretion.

Baby usually gets his exercise the first few months of his life by kicking his legs, throwing his arms, and squirming of his body. His clothing should be such that it will be no impediment to these movements. Put him down on a palate and let him roll and kick for several hours each day. After he learns to walk he usually gets plenty of exercise in this way. When he learns to crawl we like a small pen or confiner for him. This enables

the mother to put him down on the floor and confine him to a certain place. If the walls of this little pen are not too high it is an excellent device to teach him to walk.

It is a very serious mistake to house children too closely. They need fresh air, as much so, or more, than adults. As soon as an infant is ten days or two weeks old it may be kept in the open air for several hours during the day, especially during the summer season. There is no better place for it to sleep than in a screened porch, especially in the day time. The two year old child may stay out of doors all the time at this season during fair weather. But the time they suffer most for air is in the winter. They should be aired at this season by opening the windows, having been previously dressed as for out-doors. The two year old child may be allowed on the porch or even out of doors, if the wind is not too high.

The room the baby is kept in should be the lightest, best ventilated room in the house, best on the south side and up-stairs, no dampness and lots of sunshine. The temperature should be 68 or 70 degrees, but not over 70 degrees, and not quite so warm, 55 or 60 degrees at night. From birth babies should sleep to themselves, if not sometimes they are over laid. This is not often the case, but we have met with one instance where this was almost beyond question. The best reason for this, though, is that it prevents night nursing.

This brings us to the most important factor we mentioned in the beginning of our paper, baby's food. We have already taken too much time and in consideration of your feelings and as the subject of hand-feeding is a long one, we will confine the remainder of our paper to the only ideal method of feeding babies; that is breast feeding. That we belong to that class of animals known as mammalia no one seems to doubt and to attempt to rear our young any other way except at the breast is most certainly a violation of God's laws, or at least nature's law. We are sorry to say that it is sometimes a necessity, but should most certainly never be a choice. You had just as well argue to me that it is best to cut my legs off because I can get cork ones. Man may grow wise in chemical analysis but it seems that in the manufacture of infant's foods he can never put together a combination of proteids, fats, sugars, salts and water to even admit of a fair comparison as an infant food to the secretion, when in a normal condition, of those beautiful, conical-shaped organs situated on the middle anterior portion of woman's chest. The nutritional diseases of early childhood are little dreaded, if at all, when the child is nursed at a normal breast, but what a difference in the hand-fed babies and breast-fed babies. Investigators have proved again and again that breast milk is practically sterile unless infected as it leaves the breast, which should make this point very easily understood. As careful as we may be in handling cow's milk, which, however, by proper modification becomes the next best food for infants, it always contains more or less bacteria of an infective type. There is much difference in opinion as to the question whether the composition of woman's milk is very much changed by age, number of pregnancies, acute illness, menstruation, diet, drugs, pregnancy, nervous influences, such as grief, fear and etc. It is generally agreed that most of these have no great influence upon the composition of the milk, unless the general health is very much changed. As a rule mothers from 25 to 35 give a milk higher in fat than at other ages. In acute illness the quantity may be reduced but proteids may be raised and bacteria may appear. A generous diet of meat, milk and eggs or nitrogenous foods and with little exercise may raise the fats and proteids. Alcohol and malt raises the fats, but diet seems to have no effect upon the sugar. Many authors claim that some drugs, such as opium, rhubarb, chloral, iodides, senna, saline cathartics, may be secreted in amounts sufficient to show symptoms in the child, but we have very rarely seen these. We have had occasion to give mothers fairly large doses of morphine during labor and have never noticed any appreciable effects on the child. Perhaps the low secretion of the breast for the first few days after labor was responsible for this. We have met one mother who claims that magnesium sulphate, when taken by herself, purged the child. We believe it is the physician's duty to guard the mother against nursing her baby during any sort of nervous excitement, fatigue or grief as these things seem to have more effect on the composition of the milk than any other condition. Often a mother comes in tired out and over-worked and nurses her baby after which vomiting and very serious digestive disturbances take place, and it is said that even poisonous products may be present in the milk under such influences. If the mother is nursing well about the only thing required in addition to her milk up to one year of age is water.

Quite often during the warm season a child will over nurse because its system demands more water than is contained in the amount of milk it can digest, then the proteids usually cause trouble. There is no special age at which a child should be weaned or taken from the breast but after a child is six or eight months old it and the mother should be closely watched and if the drain of nursing seems too great for the mother, weaning or mixed

feeding should be begun. If possible make weaning a gradual process. It should not be done in hot weather. If mother and baby are both doing well and a child is a year old late in the spring it is a good idea to nurse it until the following fall, but watch them closely. It seems that when this is done the tendency to indigestion, with all of its attendant complications is not so great. After weaning, which is for the most part at or near the beginning of the second year, physicians need to watch children closely. People will allow the baby to go to the table and eat with the rest of the family and it is surprising what they consider proper food for the child. Good clean cow's milk should be the main article of diet the second year. If the child is under eighteen months old it will often have trouble in digesting whole milk. It will often be found best to dilute the milk with plain water or barley or oat-meal gruel. Children of this age may have in addition to milk, a small amount of fresh meats, bread, eggs, breakfast foods and fruit, especially orange juice. We like plain crackers or plain tea-cakes, not too sweet, taken with the milk. Fresh buttermilk is an excellent article of diet for some children of this age. The meats had best be deferred until after eighteen or twenty months of age, as the child will by this time have a fair set of teeth and be more able to chew them properly. Baked apples, stewed prunes and several other fruits may be given but should be freed of skins, seeds and etc., before allowed. The amount of food needed differs as to the size of the child, but as a rule, all normal children may be safely fed until the appetite is satisfied. The feeding should be about four hours apart or four times per day, perhaps some children will for the first half of the second year require five meals a day.

Now, gentlemen, if you are as patient in seeing that these details are carefully carried out as you have been in listening to this paper, we feel sure you will be instrumental in at least helping to produce one of the finest things in this world; a healthy, rollicking, rolling, kicking, crowing and lusty youngster.

Congenital Disseminated Atelectasis. — Dr. John Ruhrah, Baltimore: When first seen, Nov. 15, 1917, the child, then between 4 and 5 months of age, showed cyanosis and rapid respiration, the respirations being rarely under 50 a minute and often 75 and 80. The heart was normal so far as could be ascertained. The roentgen ray revealed disseminated patches of unexpanded lung. The child, with proper care and attention to feeding, gradually improved, and at present is apparently normal.

PNEUMONIA IN INFANCY.*

By F. S. Clark, Rome.

As we are approaching the season of the year when pneumonias are, as a rule, more prevalent, I thought it would be mutually beneficial to introduce this subject before this society for discussion, expecting more benefit from a general discussion than from anything I may have to say on the subject.

This is one of the subjects neglected by all general medical societies. We have all the latest developments in surgery, the specialists keep us reminded of everything new in their particular lines, from a different instrument to scrape the adenoids from the post-pharyngeal space to the latest photograph plate for an X-ray exposure, but we country doctors, that have no laboratory or hospital convenience, cannot put this valuable information into everyday use, so let us discuss something that is practical, and at the same time, a reef that jars many a professional ship.

In infancy, that is under two years of age, the lungs are more frequently the seat of organic disease, than any other organ of the body, not only as a primary infection, but also as the most frequent complication of other acute infectious diseases. Pneumonia also is the most frequent cause of death in infancy.

The old classification in two principal groups, lobar pneumonia and broncho pneumonia, is still adhered to, though some authorities make many sub-divisions. Lobar pneumonia is not so frequent in infancy, being comparatively rare under one year of age, although after the third year a large majority of the cases of primary pneumonia are of this variety.

The lobar pneumonia in infancy does not differ materially in symptoms or course from that found in older children.

The baby that was showing some previous signs of indisposition is suddenly seized with vomiting, has a rapid rise of temperature, rapid respiration, evidences of great prostration, usually a grunt at the end of each expiration, is restless and will cry out if handled.

Physical examination shows fast and full pulse, temperature 103 to 104, and harsh breathing over one or more lobes of the lungs; area involved is easily distinguished, as a rule, and consolidation easily outlined. Kerley states 3 per cent with convulsions.

Three stages are recognized. Congestion, lasting from one to three days, exudation or consolidation, three to seven days and resolution, one to three weeks.

The diagnosis in the first stage is the most

*Read before the Daviess County Medical Society.

difficult, as it is practically impossible to distinguish between active congestion of the lungs and the stage of engorgement of a true pneumonia.

The differential diagnosis between lobar and bronchial pneumonia is not difficult, after the disease has passed the first stage.

Bronchial pneumonia is by far a more common type in babies and is one of the most serious diseases we have to contend with. Holt says 30 per cent in private practice prove fatal, and the mortality in hospital cases runs from 50 to 65 per cent. As to the etiology there is no question of the bacterial origin of the disease, or as to its contagiousness, but the exact type of pneumococcus is not yet settled. The pneumococcus of Friedlander subdivided into types 1, 2, 3 and 4, are now considered the cause of all true pneumonias, although so many infections are of the mixed type that other bacteria often overshadow the pneumococcus in the pathological, as well as the microscopical field.

The infective bacteria of measles, scarlet fever, whooping cough and influenza are all important in causing, or helping to cause, pneumonia. Maj. Logan Clendening, M. C. U. S. A. found streptococcus haemoliticus in 14 per cent of cases. Capt. Warren T. Vaughn, Camp Sevier, found pneumococcus in 10 per cent of Type 1, of Type 2, 7.9 per cent, of Type 3, none, of Type 3, 82.1 per cent.

W. G. McCallum states streptococcus haemoliticus gives rise to extensive and fatal epidemics of broncho pneumonia.

While these recent views are mainly reported from army camps and not from Infant Asylums, yet from them we can form an idea of the bacteriology of infant pneumonia.

According to the Bureau of Vital Statistics, most cases occur during October, which month has nearly twice as many cases as any other month. February comes next.

Sex seems to have little influence, environment is very important as a cause. In the crowded districts of cities, we find the most cases and the highest mortality. Among the better educated and wealthier class of city dwellers we find the fewest cases and lowest mortality.

Poor ventilation, improper clothing and bad hygiene are the greatest predisposing causes. So many houses are made virtually air tight, heated by stoves and weather stripped and crowded in an effort to economize fuel and clothing, that the air becomes foul with carbon dioxide, coal gas, etc., irritating the air passages and lowering vitality, so that the little victim that cannot run out for a breath of fresh air, is an easy victim for invasion by the first pneumococcus that comes its way.

While lobar pneumonia begins in the air cells, broncho pneumonia begins in the bronchial tubes. Lobar is usually unilateral, while bronchial is usually bilateral. Bronchial pneumonia is insidious in its invasion, preceded by bronchitis or bad cold with cough, etc., or by one of the exanthemata.

The early diagnosis is difficult, acute congestion of the lungs, colitis, especially when accompanied by bronchitis, gastro-enteritis, tuberculosis and acidosis, may easily be mistaken for broncho pneumonia.

The microscope is no aid as babies do not expectorate. Complications to be met with are pleuro pneumonia and empyema, which are less frequent than with adults. Septic meningitis occurs, due to pneumococcus infection. The plate illustrated in Holt's book, page 707, is the brain of a baby that died at the New York Infant Asylum of acute meningitis due to pneumococcus infection while I was resident physician at that institution.

Frequent attacks of gastric enteritis may be expected, especially if expectorants are given. I also believe a child swallowing mucus from the bronchial tubes, laden with streptococci and pneumococci is a primary cause of these intestinal attacks. Other complications are comparatively rare. Tuberculosis seldom seen.

Treatment is a matter of the management of each individual case. While some general rules can be followed, yet each case has to be treated and managed according to its own requirements. Medicines are often given to the extent that they do more harm than good, this is especially true of cough mixtures and expectorants. The room should be pleasant, exposed to sunlight, easy to heat and ventillate. The bed should be placed so light does not shine directly in the baby's eyes. The baby should be clothed lightly and covered lightly, and right here is where the physician must be positive, as the lay tendency is to put on extra and heavy clothing and then lay the baby on the bed and cover it with three or four thicknesses of blanket. After it has become hot and wet with perspiration, they will pick it up without an extra cover, chill the moist surface, causing further internal congestion.

Fresh air should be admitted at all times. I use a plan that I like better than Kerley's window board. I nail a board or heavy card board 10 or 12 inches wide, across the window frame on the inside of the room, then raise the window about 6 or 8 inches, this lets in air between the board and sash, as well as between the sash. In milder weather every-

thing is thrown wide open. Do not let too many people stay in the room, they use up the oxygen, do not let a lamp burn in the room, it burns up oxygen. and that is what the baby needs.

Keep the baby as quiet as possible. too much visiting or handling is bad for it. The nurse must not be nervous, but firm and gentle. The diet should be light and of a nature that will not easily sour or ferment. Bathing and sponging are the best means to control the fever, as the intestines are apt to be disordered, an enema of water at about 95, not only relieves the bowels but helps to reduce the fever.

Anti-pyretics are seldom needed. Do not give quinine. For the full bounding pulse of lobar pneumonia, most authorities advise the use of aconite, but I never use it on infants. As the digestion is bad, owing to fever and weakness, intestinal toxemias are apt to occur. For this, laxatives and intestinal antiseptics are indicated. Calomel in 1-10 to 1-4 gr. doses, salol, soda bicarb. and castor oil will meet most indications. Stimulants should not be given until stimulation is necessary. That is usually about the time of the crisis. Then I give whisky in 1-2 dr. doses well diluted, or more if needed. Strychnia, gr. 1-200, nitroglycerine gr. 1-500 and camphorated oil, as indicated; 1-4 gr. Dover's powder if very restless.

Counter irritation is very beneficial. The mustar plaster and turpentine stupes are the the best. Oxygen will help some struggling infants pass over the crisis.

More recently the vaccines and serums are gaining popularity with the profession. While my experience has been limited, it has been such as to make me favorably inclined to their use. I have seen very little in literature, relative to the treatment of infants with the vaccines, but such as I have seen has, without exception, been encouraging.

When the baby has passed the crisis and convalescence has begun, I give pure cod liver oil, sometimes combined with a little wine or cordial. Great care must be exercised for some time as bronchial pneumonia has a tendency to relapse.

In presenting this subject, it has been my endeavor to give largely my personal views, based on an experience as resident physician in the New York Infant Asylum, under Holt, J. Lewis Smith, Jacobi and Seibert, and succeeding Kerley, supplemented by an experience of twenty-five years in general practice. I do not claim any degree of authority, but hope to arouse a discussion and expression of other personal experiences that will be mutually beneficial to us all.

VENEREAL DISEASES.*

By C. H. Harris, Louisville.

Early in the War it became apparent that venereal diseases were a very serious impediment to the making of a dynamic army. "For the year 1917 alone, the time lost from active service because of venereal diseases is equal to 2399 years. Gonorrhea accounts for 1415 years of this total."

The war made it necessary for the nation to face frankly and courageously the menace of venereal diseases. The problem of venereal control was a matter of neeessity; a war measure. As a military neeessity active and positive measures had to be adopted. The time-worn methods of handling the problem secretly, for fear of insulting the dignity (?) of its victims or their friends, when it struck in high or medium high places, the indifferenee of some, (as those who would rather have the clap than a bad cold), the utter indifferenee and abandonment of the low prostitute, who, did not care a tinker's dam about who she infected, as long as her working machinery was able to stand the strain and she could get in a few tainted sheckles. The disability engendered by the corner druggist with his "three day cure" and copied preseriptions, but who did not know the difference between the corpus eaveronosa and the endo Achilles, or the differenee between a Gram negative diplococcus and a eulex mosquito, and all this. plus the general idea of false modesty that all things relating to the sexual apparatus must be hidden and not discussed, made the task of formulating rules for the control of venereal diseases, a very serious and complex problem.

The duty was courageously undertaken, however, by the three Surgeons General: The Surgeon General of the Army, the Surgeon General of the Navy, and the Surgeon General of the Public Health Service.

As a result of the efforts of these officials there was promulgated what is known as the ten venereal rules. State and County Boards of Health throughout the country were requested to adopt them and the municipal government, especially those in close proximity to the various cantonments, were requested to enact them into city ordinances. Upon this request the State Board of Health of Kentucky and the Jefferson County Board of Health did adopt them and they were published in full in the July 1918 edition of the Kentucky Medical Journal. They were subsequently enacted into an ordinance by the municipal council of the City of Louisville.

Rule No. 1. provides for the reporting of venereal diseases.

*Read before the Eighth Annual State Conference or School of County and City Health Officers. Louisville. May 12-15. 1919.

Rule No. 2 provides for the giving of information to patients concerning the seriousness of the disease with which he or she is afflicted, and such information warns against the spread of such disease by the commitment of any act that would propogate it.

Rule No. 3. makes it obligatory upon all county and other local health officers to investigate all cases of syphilis, gonorrhea and chancroid within their several territorial jurisdictions, and to ascertain, if possible, the source of such infection. Local Health Officers are empowered and directed to make such examinations of persons reasonably suspected of having venereal disease and especially emphasizes that, owing to the prevalence of such diseases among prostitutes and persons associated with them, all such persons are to be considered in the suspicious class.

Rule No. 4 provides for the protection of others from infection by venereally diseased persons.

Rule No. 5 provides for the conditions under which the name of the patient is required to be reported. A private patient may be known and reported to the Health Officer by number only, but should he or she discontinue treatment, or commit any act that would spread the disease, knowingly and willingly, it then becomes the duty of the physician to report such a case to the Health Officer by name, who is thereupon given the power to quarantine.

Rule No. 6 prohibits druggists from prescribing for venereal disease.

Rule No. 7 makes the spread of venereal disease mulawful and subjects the offender to the dangers of being quarantined.

Rule No. 8 provides for the repression of prostitutes, which is declared to be a prolific source of syphilis, gonorrhea and chancroid, and clearly brings the spread of venereal diseases into the domain of a public health measure.

Rule No. 9 provides against the giving of certificates of freedom from venereal diseases.

Rule No. 10 provides for the keeping of secret records, which shall be inaccessable to the public.

Upon the completion of our methods giving us legal authority to act, and the provision made by the interdepartmental social hygiene board, Bureau of venereal control, clothing the health officer with military rank, and the appropriation of moneys necessary to carry on the work, we proceeded with our efforts to quarantine. The upper floor of the county jail was converted into a dormitary by the Commissioners of Jefferson County where we could place in quarantine all prostitutes taken up upon the public highway, and caught in raids conducted by the military police upon houses of prostitution. A contract was made with the Union Gospel Mission management who also converted the upper part of their building into a dormitory for women. Having then provided areas of quarantine, the authority for so doing coming through the rules as specified above, our work was carried out in the following manner: The police matron, Miss Annabel Kahn, was deputized by me as a quarantine officer. Miss Kahn attended all trials in the police court, and upon hearing the evidence jutifying the suspicion that those on trial were probably venereally infected, they were taken into custody and sent to the county jail, the jailer being served with this order:

"To the jailer of Jefferson County: You are hereby directed to keep, who is now suffering with a venereal disease, or whom I have reason to believe is suffering from a venereal disease, quarantined in the Jefferson County Jail, and keep such person so quarantined until you receive a written notice that the quarantine has been suspended by the Health Officer. Signed"

Immediately the quarantined individual was examined by Dr. A. M. Barnett, Jail Physician, and Acting Assistant Surgeon U. S. P. H. S., said examination consisting of a hunt for venereal sores, mucous patches, erosions of the cervix, etc., blood being taken for a Wasserman. Vaginal examination was made for discharges, a smear made from the secretions of the cervix, vagina urethra, by spreading on slides. These specimens were carefully labeled, locked in a box with a Yale lock, put in the custody of a military police man, sent to Dr. Stuart Graves at the laboratory of the City Hospital, who also had a key to the box, the bacteriological findings were reported back to the jail and if found negative, the following order was issued to the jailer:

"I..... M. D., Deputy of the County Health Officer of Jefferson County and official bacteriologist of the United States Public Health Service have this day examined clinically and bacteriologically, ..., and find that is not at this time suffering from active gonorrhea, chancroid or syphilis and is therefore ordered liberated from quarantine."

In cases where the findings were positive the individual was treated by the injection of salvarsan, mercury and irrigations and applications, or gonorrhea, as the case may be until they were rendered noninfectious, and after signing an agreement to report to the public clinic or a reputable physician for further treatment and observation, were dismissed from quarantine. Upon their dismissal the

following card was sent either to the clinic or to the physician where they agreed to report with a request that it be filled in and immediately returned:

"..... has reported to me for examination and treatment on the day of 19..... The treatment applied in case consisted of Any failure on part to be obedient to the instructions will be promptly reported to you."

Since beginning our quarantine propaganda, the period covering that time from May, 1918, to the present date, 1131 individuals have been quarantined. They have remained in quarantine 22390 days and the expense of maintenance alone amounts to $17,806.00. The expense for maintenance was generously borne by the Commissioners of Jefferson County who cooperated in every possible way with the health authorities.

In January of the present year, United States Department of Venereal Control appropriated the sum of $15,000.00 to be used for maintenance, allowing the expenditure of not to exceed $2500.00 per month from January to June of the present year. The effort to deprive of their liberty, prostitutes afflicted with communicable forms of venereal disease precipitated a good bit of litigation. A number of habeas corpus suits have been tried, the first one being dignified in the hearing by the five circuit judges of this city, and in a very able and learned opinion written by Judge Walter Lincoln, he denied the applicant her freedom upholding the rights of the health officials to quarantine anyone afflicted with a communicable form of disease in which he or she may become a public health menace. We have, up to this time, won every case of habeas corpus, all the cases being defended by Mr. Lawrence Leopold and Mr. Ben. F. Washer, attorneys of the highest class of Louisville, who volunteered their services to the health officials, as a contribution to help win the war, and protection to the public health.

While we have quarantined quite a number of men, it was yet recognized that the economic loss was greater when they were quarantined and they have mostly been paroled to their own physicians or the public clinic, and only those were held who were unwilling to abide by the strict rules laid down.

It is not surprising to know that most of the women quarantined were generally of a low mental type. Out of 128 examined in the county jail by the Government psychiatrist, using the Simon Benet method, more than 50 per cent were found with a mental age of less than 10 years, which classified them as feeble minded. Another large per cent were low grade morons, having a mental age from 10 to 11 minus, another large per cent were high grade morons having a mental age from 11 to 12 minus and very few were found having a mental age of 12 years, which was considered to be the age when they were morally responsible. At present we are using one of the wards at the City Hospital as a quarantine station where we have capacity to quarantine 60. Only those are held in jail who have fines and bonds. The quarantine station at the City Hospital is thoroughly equipped for treating these cases and the surroundings are made as pleasant as possible. They are under the care of a day and night matron and under direct supervision of competent physicians. The ward is equipped with a piano, sewing machine, sewing material, and reading matter, games, etc., and an effort made to keep these women employed in some useful way.

Gentlemen, let me make a plea for your hearty cooperation in this great problem of venereal control. As health officials we owe it to the public. The day has passed when health officials and the public can with impunity neglect this serious and vital question. Less syphilis and gonorrhea means a saving of many lives. In its serious ramifications we have blindness, laparatomies, locomotor ataxia, paresis, insanity, arterio sclerotic changes and the various other numerable and terrible consequences.

OBSERVATIONS FROM ONE HUNDRED AND THIRTEEN CASES OF CEREBRO SPINAL FEVER.*

By C. N. Caldwell, U. S. N., Louisville.

Cerebro-spinal fever is an acute infectious disease caused by the diplococcus intracellularis meningitidis of Weiselbaum and characterized by its very sudden onset with acute symptoms, by an inflammation of the cerebro-spinal meninges, by a high leucocyte count and by a septic temperature.

This disease has been known as a separate entity for over a century and has been in constant evidence either in epidemic or sporatic form in Europe and in the United States ever since. It is a peculiar fact that when occurring in epidemic form it does not as a rule cover very much territory but stays in a given community where it is most prevalent in the winter and spring. Preceding epidemics in military bodies it usually exists in epidemic form amongst the civilian population and according to Osler it is more prevalent in rural districts than in cities. In the Navy there has been a very close relation between increases in its personnel and the degree of prevalence of cerebro-spinal meningitis as

*Read before the Jefferson County Medical Society.

shown by the annual report of the Surgeon General for 1917.

Children and young adults are the most susceptible and any change of environment with its subsequent lowering of the general resistance plays an important role. Practically all of a series of one hundred and thirteen cases treated of in this article were in men under the age of twenty-five. It is spread mainly by the naso-pharyngeal secretions of both active and passive carriers by coughing, spitting and the exchange of linen. Flexner in a large number of cases of active cerebro-spinal fever has in the majority of cases gotten a positive culture from the naso-pharynx. Patients following an attack are usually carriers of the organism and are very resistant to treatment due to the fact that the organisms collect in the sinuses where it is impossible to apply antiseptics directly; in these cases about all that can be done is to build up the patient's general condition so that they have sufficient resistance to fight it internally. There has not yet been found any solution that is specific for the meningococcus although big claims were made a short while back for dichloramine T, but positive cultures have frequently been gotten after persistent use of this solution for a reasonable length of time. Vaccination was highly advocated for a while but has not given results constant enough to make it worth while as a general measure.

The symptomatology of this disease is rather constant in form but very variable in degree. For a better handling of the subject it can be divided into the following forms or types: First the usual form, second the fulminating or malignant type, third the abortive form and fourth the chronic variety.

First, then, the usual form: It is as all forms, sudden in onset, beginning with a chill followed by a variable rise in temperature and almost invariably by vomiting which is usually spoken of in text books as being projectile in character, but we have not found this to be so in the average case, for without any nausea or retching the patient suddenly regurgitates a small amount of a thin greenish yellow mixture of mucous and serum which is not particularly acid. Often the only way to tell that the patient has vomited is by finding a greenish stain on the bed-clothes. Of great importance is the headache which occurs in one hundred per cent of cases and is excruciating. It is most intense at the base posteriorly and radiates down into the neck and back and is usually a constant pain (not the throbbing type of headache found in other conditions). Pain in the lumbar region, dull in character and radiating down into the legs, may or may not be present but is of good diagnostic value when found with the other signs and symptoms. The muscles of the neck early become rigid and draw the head back so that, in severe cases, the patient may complain of difficulty in breathing and nothing but liquids can be swallowed. There seems to be some relation between the degree of opisthotonus and the time elapsing between the onset of the disease and the first lumbar puncture. However, puncture has very little, if any, effect after the head is once retracted. The Kernig, if properly done, is very valuable and present in practically all cases, but pain under the knee with the leg extended and the thigh flexed beyond a sixty degree angle does not constitute a sign of any value, as this can be obtained in almost any normal person, the more muscular a person the more apt is there to be a so-called positive Kernig probably due to the higher degree of tone in the hamstring muscles. There is nothing constant in the pupils in this class of case, but there is an expression of anxiety that is nearly always present, the patient, while talking to the examiner and trying to look at him, seems to be in a dazed condition and looking into the distance, the answers to questions are usually rational but slow and have to be almost extracted; other patients are in a semi-delirium and irrational. The most characteristic thing about the temperature is that there is nothing characteristic about it, some have a normal temperature that stays normal or thereabouts, through to convalescence or death. Others have a constantly high temperature (102-105) until the end. The third, and most frequent, class have a septic temperature that jumps about within a range of from normal to about 104. The white blood count is high but very variable, a count below 18,000 almost excludes cerebro-spinal fever, while it has been found as high as 90,000, the polymorphonuclear leucocytes are much increased proportionately. An eruption may or may not be present, we found it in 54 per cent of cases. Two types may be noticed: first, in mild cases a small discrete pink maculo-papular eruption resembling flea bites, extending over the back, chest and arms; and second, in more severe cases a mottled macular minute to three-quarter inch sized eruption varying from reddish to a claret or deep purplish shade on the chest, abdomen and most marked on the extremities below the elbows and knees. (In one case these spots were noticed in the palms of the hands). The size and depth of color of these spots vary with the severity of the case and in the malignant cases are very dark and dense and tend to coalesce. A more constant skin lesion is herpes on the lips, observed in 68 per cent of cases, in some the blisters extend up and over the nose and in a few

cases vesicles have been found over the course of the different cranial nerves resembling a Herpes Zoster. Shamberg claims that this is a very good diagnostic point and is more constant in cerebro-spinal fever than in any other disease except possibly pneumonia.

The second or malignant form in which the patient is admitted in an unconscious condition, wild, raving, tearing at everything and everybody and yelling at every breath, the pulse is greatly accelerated and the temperature very variable (some very high and some subnormal). The eruption is usually profuse, widespread and deep in color and all of the symptoms in the above class of cases are present and much exaggerated. There is usually a history of very sudden onset as is shown by the following case: W. S., admitted December 30th, at three P. M., in an unconscious condition and in a wild delirium with the following history: At 10 A. M. the same morning he had been shoveling coal (had not complained at all up to this time) and one hour later was found unconscious and transferred immediately to the hospital. Treatment apparently had no effect, four punctures were done at intervals which gave some temporary relief but he would go back again into his former condition of struggling and fighting until completely exhausted, then lie in a coma until he regained strength enough to begin again. He died January 3rd.

The third or abortive type usually presents more difficulty in diagnosis and depends more on the laboratory examination of the spinal fluid and the blood count. The patient complains of a constant and severe head and back ache, the neck is rigid but little or no retraction, Kernig is doubtful, there may or may not be herpes on the lips and there may be the first type of eruption mentioned above which is most marked on the back, pulse is slightly accelerated and the temperature varies from 101 to 104, white blood count ranges from 17,000 to 25,000 and there is usually a history of vomiting for several days. One or two punctures clear up these cases which recover almost as fast as they were attacked. An example of this type is: L. H., admitted January 29th, in a somewhat stuporous condition with a rigid and slightly drawn neck and complaining of violent headache at the back of the head and pain along the spinal column, intense in the lumbar region, white blood count 17,000. Lumbar puncture was done and 35 c.c. of a flaky fluid under slight pressure was withdrawn, laboratory report on the fluid was doubtful on the organisms but the cell count was high and globulin positive. The second puncture was done on the following day and fluid found a little more cloudy and still under pressure. Serum was given on both days and the patient cleared without any further specific treatment.

And the fourth or chronic type which may: first, begin as a chronic or subacute process and never assume a dangerous appearance as the case of: W. P. H., admitted on February 19th, in a conscious condition with no marked symptoms but giving the following history: On February 2nd he first complained of pain in his head, back and legs, at this time the temperature was 101, pulse 108 and respiration 16, urine was negative. Up to the 16th, the temperature ranged from 97 to 104 with an evening rise, the pulse stayed around 64 and respiration 16, at times he had violent occipital and frontal headache when his pulse would go down to 50 and respiration to 10, at times he would complain of stiff neck. On the 19th, he arrived on this ward where a lumbar puncture was done and 30 c.c. of a turbid fluid removed which showed the organisms on examination. He cleared very rapidly under treatment, only three punctures being necessary. And second, cases that begin as the acute or usual form and later become chronic as: W. A. E., admitted December 31st, with all of the typical signs and symptoms. He was punctured daily for seven days at which time he seemed to clear so that punctures were discontinued but on the 14th, he again sprung a temperature and the head began to draw, so another series of punctures were begun on every second day for four times then given at intervals of several days as symptoms indicated. Gradually the condition cleared and at the end of a month and a half all symptoms had disappeared but convalescence was very slow and it was two and half months before he was able to go home.

In all cases the only absolute diagnosis is made with the needle and microscope. Gross examination of the fluid is sufficient if no other means are available to make a decision whether or not serum is indicated but the finding of the typical gram negative intracellular diplococcus with the various cultural and agglutination tests is always the final test in accurate diagnosis.

In treatment there are always two primary and essential factors to bear in mind: First it is an acute disease (one of the most rapid in onset known) therefore needs prompt diagnosis and treatment; second, it has a specific therapy. The entire course of the disease is largely dependent upon early diagnosis and treatment, and treatment is largely that of lumbar puncture, so that the results in meningitis rest almost entirely on early and frequent use of the needle. All cases on admission are given a thorough purge to relieve

them as much as possible from the intense toxemia and as a matter of routine all throats are sprayed with antiseptic solutions at least twice a day. Dichloramine T was used for a while but in a large per cent of cases was found irritating to the mucous membranes and gave no better results than the alkaline sprays which are much less irritant. For a while morphine was tried to quiet the particularly wild cases but cases that were wild enough to need a sedative seemed very little, if at all, affected by it. One particular case was given quarter grain doses at half hour intervals with no noticeable effect except a slowing of the pulse rate, it was necessary to give him chloroform to do the puncture, but as soon as the chloroform effect wore off he began again. Hot packs were then tried with fairly good results. On admission all cases that look at all suggestive of meningitis are punctured at once and if the fluid is at all suspicious 15 c.c. at least of the anti-meningococcus serum is given, the amount depending on the appearance of the fluid and the amount withdrawn. As much as 60 c.c. has been given in an initial dose but 90 c.c. of a thick fluid (almost pure pus) had been removed. The indications for lumbar puncture are: headache which is progressive and unrelieved by ordinary measures, pain on flexion of the neck, a positive or even suggestive Kernig, persistent and uncontrollable vomiting with mental drousiness, white blood count above 18,000 and the rash when it is found. No definite rule can be laid down as to the amount of fluid to be withdrawn, it is *usually* stated that it should be allowed to drain until only three or four drops come to a minute but in a large per cent of cases this is impractical as the fluid when pressure is materially reduced is effected by respiration and comes in spurts at the end of inspiration so that air is sucked back through the needle during expiration. Personally, the best rule to follow when the patient is conscious is to stop when he complains of the headache being very intense. If, however, at this time the fluid is still draining freely irrigation is started, enough saline being put in to stop the headache, then a little more withdrawn than was put in, by repeating this process several times the desired amount of fluid can be withdrawn with a minimum amount of pain. The question of irrigation is a much mooted one, some claiming good results for it and others none at all. We have used it in practically all cases and consider it one of the most important parts of the treatment, for when once a canal has been thoroughly irrigated a marked change for the better usually occurs. The fluid most commonly used for irrigation purposes is normal saline solution and it was used on this ward for quite a while but it was noticed that in many cases the patient complained of pain in the legs and back when only a few c.c. had been injected yet would not complain a great deal when 30 or 40 c.c. of serum was used. The only reasons that could be suggested to account for this were: that the serum contained trikresol as a preservative (which has an analgesic effect) and that the serum has a very much higher specific gravity than the saline. Therefore as trikresol could not be gotten, guaiacol, because of its similar action, was tried, also in attempting to correct the second cause it was found that normal saline has a specific gravity of about 1000 while the serum was found to have 1022, so glycerine was added in sufficient quantity to raise the specific gravity of the saline to that of the serum (2 parts of the glycerine to 80 parts of saline with four tenths per cent of guaiacol was the result). Glycerine was used because it is heavy and would produce the desired effect with the addition of a relatively small amount, because it is practically non-irritant and because of its hydroscopic action which it was thought might increase the amount of spinal fluid. The results have, we think justified its constant usage as a much larger amount of the irrigating fluid can be used with, in most cases, very little pain. The fact that very violent pain is encountered in some cases does not necessarily condemn irrigation as a general measure for in many of these cases relief can be obtained by changing slightly the course of the needle thus probably getting it away from some particularly inflamed and tender point. Irrigation should be continued until the returning fluid comes clear, using as much solution at such injections as the patient will stand (they always complain of pain in the legs and back first). This rule applies only, though, in cases with a free and open canal, in quite a few, however, it is impossible to get this thorough irrigation as the fluid goes in readily enough but is very difficult to withdraw again, suction should be used very cautiously if at all when this condition is encountered as it comes better slowly than by the use of force and it is a very dangerous procedure. No explanation is offered for this unless it could be due to a loose piece of tissue being drawn against the end of the needle and acting as a one-way valve. One case in which this feature was unusually marked showed at autopsy numerous and thick adhesions in the lumbar region. This question of adhesions has come up in several cases and it is presumed that pockets are formed which block off certain areas and thus form a large number of small processes instead of one large general condition. This is the only explanation that can be offered for

quite a few cases, two of which will be cited: First, the case of S. H. B., admitted January 8th, in an unconscious condition with all of the symptoms of meningitis marked, the following punctures were done:

					SALINE IRRIGATION
1-8-18	Puncture	+F 55cc.	+T 3	+P 3	Serum 30cc.
1-9-18	Puncture	+F 70cc.	+T 3	+P 3	Serum 45cc.
1-10-18	Puncture	+F 40cc.	+T 3	+P 2	Serum 30cc.
1-11-18	Puncture	+F 10cc.	+T 4	+P 0	

+F standing for the amount of fluid withdrawn; +T for the turbidity of the fluid, and +P for its pressure.

As is shown by this case, on admission the fluid was abundant and came out under pressure freely but due to some unknown cause it diminished in three days from 70 c.c. under pressure to 10 c.c., which was withdrawn with difficulty and only after the needle had been inserted between several different vertebrae and at several different angles at each level. A few drops were gotten each time the needle was put in which came out with a spurt, showing high pressure somewhere within, then dribbled a few seconds and stopped. A few c.c. of the irrigating fluid could be injected with considerable force into these sacs, if such they were, but would spurt out again then dribble and stop just as the original fluid had done. This procedure was repeated each time that the needle was put into a new place. Second, the case of E. E., admitted January 29th, in a stuperous condition with all of the typical symptoms. Five punctures were done on successive days, an average of 50 c.c. of fluid being gotten each time; but on the sixth day a dry tap was struck in the usual region so the needle was put in between two other vertebrae in this region and only a few drops secured. The needle was then put in at the sixth dorsal space and 70 c.c. of a two plus turbid fluid withdrawn. This case illustrates what might be called a blocked canal for punctures were made at three different levels in the lumbar region from which a few drops were gotten showing beyond a doubt that the needle had entered and that the canal was practically dry in this region and yet when the needle was put in a little higher 70 c.c. spurted out as soon as the stylus was removed. We can think of no other explanation than that adhesions had formed a walling-off process and that the needle at one time entered a cavity not connected with the main canal from which the fluid comes. This brings up the question of the origin of the cerebro-spinal fluid which, it would seem from the second case cited and from others of a similar character, came from structures in the brain cavity. To substantiate this view it may be added that in all cases in which autopsies were done there was always found fluid in the lateral ventricles even when the other cavities were practically dry and the choroid plexus was usually found enlarged, boggy and covered by a thick sero-purulent exudate.

Following irrigation the serum is given. The amount depends on the appearance of and the amount of fluid withdrawn, in cases where the fluid is very turbid it should be replaced by almost as much serum; those in which it is only slightly turbid, 15 to 30 c.c. is usually sufficient. If, however, when this amount has been injected the patient still complains of headache, enough solution may be added for relief, for after all this is the best guide. If any of the symptoms of shock appear after injection, some of the fluid should be withdrawn even if it necessitates replacing the needle. In some of the worst cases and in those that did not respond to this intraspinous treatment blood cultures were taken and a very large per cent were found to be positive so that intravenous injections of serum were tried. As no literature was at that time available on the ward very small doses were attempted at first which gave no results and showed no reaction so that they were rapidly increased in size until 100 to 200 c.c. were given at single injections. The following month, January, 1918, it was learned from a new man joining the staff that similar doses were being used in other hospitals. The results in some cases were very good, subsequent blood cultures taken a few days later being negative for the organisms and the symptoms clearing rather more rapidly than in cases where intraspinous method was used alone; other cases did not seem to show much response. Hand in hand with the question of serum treatment goes that of anaphylaxis, or serum reaction, which is a specific protein hypersensitiveness. Following the injection of serum intraspinously the reaction occurs in from eight to twelve days showing that it takes that length of time for absorption from the cerebro-spinal system into the general circulation in sufficient quantity to exert an appreciable effect on body function. This has been determined by noting the length of time elapsing between the first injection of the serum and the resulting reaction both in cases which received a single course and those in which one series was followed by another. To illustrate these two types: first the case of F. L. S., admitted January 27th, and given three punctures on the first three days. Eight days later, without any apparent cause, he had a chill, broke out with an intense urticaria and ran a temperature for twenty-four hours, then all symptoms cleared and he went on to a rapid and complete recovery. Second, the case of W. K., admitted March 4th, and given four punctures on the first four days when a dry tap was found on two successive days.

Punctures were temporarily discontinued but begun again one week later, when another series of six punctures were given. On the tenth day from the beginning of the second series the patient went into a violent state of shock with all of the symptoms of anaphylaxis which will be described later. Many other such cases have occurred and all within six to twelve days. Following the subcutaneous injection the reaction occurs in from forty-five minutes to an hour and a half as: S. D. B., admitted February 23rd, and given the usual intraspinous treatment. On the 27th he was given 15 c.c. of serum in 150 c.c. of normal saline by hypodermoclysis and fifty minutes later had a chill, broke out with the urticaria and the pulse jumped from 112 to 150. Following intravenous injection it usually occurs in one to three minutes as in the case of C. E. S., admitted February 14th. On the 16th, he was given 15 c.c. of serum intravenously, on the following day 25 c.c., and three days later 30 c.c. followed in two minutes by a most violent anaphylactic reaction; he had a very severe chill lasting about ten minutes then broke into a drenching perspiration, the pulse became weak, almost imperceptible, and so rapid that it could not be counted. Cheynes Stokes respiration soon developed, an urticaria appeared in large blotchy spots covering the entire body, a slight hemorrhage appeared from the mouth, the extremities became cold and the hands and feet very cyanotic and there was noted a puffiness under the eyes and the glottis became edematous almost blocking off the respiratory tract.

Stimulation was used, the foot of the bed raised and heat applied; in about forty-five minutes he began to respond, the following day he was much brighter than he had been at any time since admission. Three days later he was sitting up in bed and ten days later he was allowed up. The length of time it is safe to let elapse between serum injections has proven to be very variable in different individuals, some having the reaction with an interval of only two days while others have gone two weeks without showing symptoms. Intravenous serum does not seem to have any direct effect on the spinal fluid and should not be allowed at any time to act as a substitute for intraspinous administration but when indicated merely be used in conjunction with it. There are, however, certain cases in which intravenous serum is definitely indicated and in these cases it should be used and used in large and frequent doses. It is particularly indicated in cases of dryecord, where the intraspinous method is eliminated, in three such cases when lumbar puncture was attempted two to four days later fluid was found, whether or not there is any connection is of course impossible to say. It is good in cases that have become complicated, especially if the organisms are cultured in the blood, and it is probably well to try it in cases of the fulminating variety.

The prognosis in cerebro-spinal fever should always be guarded as the mildest cases may change suddenly for the worse and fulminating cases do rarely get well. Clearing of the fluid, reduction in pressure and lowering of the temperature and relief from the headache are good signs. Cases that have an abundance of fluid usually do better than those with small amounts. A sudden reduction in the amount of fluid and increase of the turbidity is always grave. The fluid that, following a course of serum, has a clear lemon yellow appearance over the sediment after centrifuging is often found just before a change for the better. This color, however, if not associated with the administration of serum is a bad sign as it indicates a blocking of the canal somewhere above the point of puncture. It has been noticed that when small flakes are found in a clear fluid early in a case, or if they appear late, very small and fine and associated with clear fluid, the prognosis is favorable. Headache is probably the best single sign of the progress of the disease, vomiting late is serious, often being associated with brain abscess, and nystagmus is grave. A heavy blotchy rash that appears early usually indicates a severe case. Suddenly dilating pupils late in the condition is grave.

Postmortems have been done in relatively few cases but findings have been rather constant. There are a few adhesions of the dura externally to the skull and internally to the pia-arachynoid, the latter is injected most markedly about the base where it is often considerably thickened. This infiltration is independent of the blood vessels. The ventricles are dilated and contain a cloudy fluid, the choroid plexus is thick, enlarged and in some cases has a brawny feel and the lobules may be obscured due to the marked distention. There is usually a thickening of the meninges in the spinal canal, often most marked in the lumbar region and about the spinal medulla, there may also be adhesions between the various structures in these regions.

Conclusions: Cerebro-spinal fever is an intensely acute disease, therefore diagnosis should be made early, treatment begun at once and pushed for effect, (some cases have been punctured, irrigated and given serum every six hours for several days besides the intravenous treatment). Serum is specific for the organism even if not always specific as to type and should be given in all cases, if in doubt give it, intravenously after removal of

excess fluid and free irrigation, intravenous serum has its place which has recently been shown to be much wider than was at first suspected, and should be used in large doses at short intervals when indicated. Anaphylaxis must be guarded against as much as possible by using the fractional method of administration when previous serum has been given and by giving adrenalin or atropine or some such drug with the serum when it is given intravenously. Irrigation should be used in all cases when the fluid is turbid. The disease is spread mainly by the naso-pharyngeal secretions of both active and passive carriers. Symptoms of the disease are rather constant in form but vary greatly in degree, therefore each case must be treated on its own merits. Of the one hundred and thirteen cases seventy-two were of the usual type, nine of the chronic variety, ten of the abortive form and twenty-two were fulminating. On admission fifteen were conscious, seventeen semi-conscious, fifty-seven stuporous and twenty-four delirious; sixty-three had moderate rigidity of the neck and twenty-nine had herpes on the lips, twenty-one had retention of urine, an eruption of some character was seen in sixty-one cases and three were jaundiced, one hundred per cent complained of headache. Complications usually follow the usual form, the following complications were encountered in the above cases: Pneumonia seventeen, eye complications twelve, nephritis eight, mastoiditis one, metastatic abscesses two, synovitis two, (both in the knee joint), pericarditis with effusion one, deafness two, empyema one, and brain abscess two. The mortality varies greatly in different epidemics. There was in these cases a total mortality of thirty-four per cent but of these ten had an intercurrent pneumonia of longer standing than the meningitis, one had an empyema and one as was later shown at autopsy, had a brain abscess that was an extension from the middle ear, therefore in straight cases there was a mortality of twenty-three percent. The prognosis should always be guarded.

Founders' Day Dinner.—Founders' day dinner exercises were celebrated under the auspices of the Louisville Alumni Association of Vanderbilt University, at the Pendennis Club, Louisville, May 24. Dr. John A. Witherspoon, Nashville, Tenn., delivered the principal address.

Yellow Fever in Guayaquil.—The clinical and pathologic features of the yellow fever prevalent in Guayaquil conform with those described by other investigators of this disease as it has occurred elsewhere, both epidemically and endemically.

IN MEMORIAM

EDWIN B. SHELTON.

At the annual meeting, May, 1906, the profession of Ballard County was honored by the election of Edwin B. Shelton, of Blandville, to the Presidency.

Dr. Shelton was born near Hinkleville, Ballard County, Kentucky, September 17, 1865. He acquired his literary education at Blandville College, and Kentucky University at Lexington.

He was well equipped for the study of Medicine, which he began in 1886, under the preceptorship of his father, Dr. R. M. Shelton. He took his degree in medicine from the Jefferson Medical College in 1889. Upon his return home, he formed a partnership with his father, which continued until the latter's death in 1895

He remained at Blandville until January, 1908, when he moved to Wickliffe, about eight miles distant. He became a member of the Southwestern Kentucky Medical Association in May, 1889; its first meeting after his graduation. He was a regular attendant and one of its most efficient members.

At the Annual Meeting of 1903, he was chosen First Vice President. Dr. Shelton was during his thirty years of professional life an enthusiastic worker in medical societies. He held membership in addition to this body, in his county society, the Kentucky State Medical Society, and we suppose the American Medical Association. He was a close student and a faithful conscientious practitioner.

He continued actively in practice until his death, March 18, 1919. For perhaps twenty-five years Dr. Shelon was a Mason, and in life he practiced its beautiful tenets.

His death was a personal affliction to us all. We feel quite sure that without an exception, we honored, respected, yea! loved him. In his work he was alert, painstaking, kind, sympathetic. He was for many years a member of the Christian Church.

Dr. Shelton was endowed with a bright mind, his attainments were of a high order; he was possessed of considerable means, notwithstanding these influences, he was utterly devoid of vanity.

Dr. Shelton served his County Medical Society as President. At the time of his demise he was examiner for the War Risk Insurance Co. Let us hope, aye, trust, that our Brother, after thirty years' work, in the most unselfish, and exacting professions on earth, is now resting "from his labors and his works do follow him."

Premedical Work Required.—The Kentucky State Board of Health has adopted as a requirement for application for licensure, two years of premedical work. This rule becomes effective in 1922.

BOOK REVIEWS

The Health Officer—Frank Overton, A. M., M. D., D. P. H., Sanitary Supervisor, New York State Department of Health, and Willard J. Denno, A. B., M. D., D. P. H., Medical Director of the Standard Oil Company, Philadelphia and London; W. B. Saunders Company, pp 512, Price $4.50 net.

It is impossible in a book of this title and size to cover thoroughly the subject of a Health Officer, and the affairs pertaining thereto. However, as a book of general information, it is of much value. The illustrations are apt and many could be used in poster form for the education of the general public and school children.

The first part of the volume is devoted more to the Health Officer, his office, organization, administration, laws and ordinances, records, vital statistics, etc., and is the general method in vogue in New York State. The chapters especially pertaining to records, are quite beneficial to the less initiated and ideas are brought forth in the foregoing to the more initiated. It might have been desirable to incorporate some of the activities of other States doing splendid work in Health lines, to give the work a broader horizon.

The Communicable Diseases are taken up seriatim and the chapters devoted are especially adapted to beginners in health work and to rural communities, including school teachers. The beneficial effects of influenza vaccine are not mentioned, though perhaps the literature pertaining to this method of combating this disease, as regards the recent epidemic, were not entirely correlated.

Venereal Diseases are given a chapter, and under the present legalized measures, quarantine, being reportable, social and moral forces, education and prophylaxis, a better condition as regards control can be looked for. As the laws in various States differ regarding mental defects, that of New York only is given. This chapter is valuable to those health officers having as much authority as conferred in New York State; and will call attention to cases that many times are overlooked as regards commitment by the average health officer in other states.

The various chapters to complete the volume, not all of which are here mentioned, milk, nuisances, sewage disposal, industrial hygiene, camp sanitation, child hygiene and life extension are splendidly exposed, and it is to be regretted that more space could not have been allotted to some of them.

The authors are to be congratulated in bringing this volume out, and also the publishers for their usual good typographical and book work.

Practical Medical Series.—Comprising eight volumes on the year's progress in medicine and surgery. Under the general editorial charge of Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume II. General Surgery, edited by Albert J. Ochsner, M. D., F. R. M. S., LL. D., F. A. C. S., Surgeon-in-Chief Augustana and St. Mary's of Nazareth Hospital. The Year Book Publishers, 304 S. Dearborn street, Chicago. Price $2.50.

The present volume is one of a series of eight issued at monthly intervals, and covering the entire field of medicine and surgery. Each volume is complete on the subject of which it treats.

The present volume is especially rich in material that has been produced by the splendid surgeons who have worked with the Allied armies. The number of reviews from other countries is necessarily small because the original articles have not been obtainable.

Practically the entire field of war surgery, together with a considerable amount of reconstruction surgery has been considered, which will make this issue of unusual value. This is especially true also since in many instances the application to industrial surgery has been brought into consideration. This part, however, will be even more marked in the next issue, because the entire surgical world seems to be intent upon exerting the utmost effort to make the work of reconstruction a permanent blessing to the men who do the world's labor—to compensate in a measure for the losses sustained.

Having been greatly encouraged by the generous reception which the profession has given to the last volume, we wish to tender our sincere thanks to the medical press for the appreciation which they have uniformly expressed toward our efforts.

Analysis of Ectopic Gestation.—From Farrar's study of these cases it appears that infection or mechanical alteration due to adhesions of the fallopian tube predisposes to ectopic gestation. The onset of symptoms or an acute attack occurs equally as often at the time of an expected period, or just after a normal period, as it does when a period is overdue. Pain with, or without, bleeding is present in every case of ectopic gestation unless unruptured. Tearing, lacerating pain is not as common in ectopic gestation as pain of a cramplike or bearing-down character. Unusual, one-sided pelvic pain when associated with evidence of peritoneal irritation and fainting warrant the diagnosis of ectopic gestation.

Gas Cysts in Abdomen.—Tuffier and Letulle report a case of fatal stenosis of the small intestine from the effects of thousands of minute gas cysts in the abdomen. In a second case all the abdominal symptoms subsided after gastroenterostomy. They have found sixty-four analogous cases of encysted pneumatosis on record.

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Next Meeting Lexington, 1920.

COUNTY SOCIETY REPORTS

Carlisle-Ballard—On August 5th, 1919, there was held a joint meeting of Carlisle and Ballard counties at Coon Branch Bridge, with the following doctors present: From Ballard county: S. R. Fairchild, Robt. Overby, W. A. Page, W. A. Ashbrook, T. J. Davis, G. L. Thompson. From Carlisle: W. Z. Jackson, D. S. Robertson, R. T. Hocker, T. J. Marshall, H. T. Crouch, J. F. Dunn, W. L. Mosby, G. W. Payne, H. A. Gilliam, R. C. Burrow. Visitors: D. H. Ray, Dublin, and Burnett Benson, New York City.

The scientific program, after Divine invocation by **R. T. Hocker**, was opened by **G. W. Payne**, who read a very able paper on "Ectopic Gestation." He emphasized the importance of early diagnosis and surgical interference. The paper was discussed by **W. A. Ashbrook**, being followed by others of the meeting who related some interesting cases that they had battled with in their personal careers. Discussion was closed by the essayist.

H. T. Crouch delivered an excellent paper on "Prophylaxis and Treatment of Malarial Fever." This was a very modern paper, the author laying great stress on the prophylaxis especially, which he says will in the future practically eradicate malaria from this country. The paper was discussed by most every one present, **Dr. Benson**, who was in the service over a year, relating his experience while sanitary inspector in the army. **H. T. Crouch** closing the discussion.

The society then adjourned for dinner, which consisted of barbecued goat, pickles, bread and coffee. The dinner was greatly enjoyed by all present and even Dr. Page, who came in after dinner was over, complimented it very much, not in words, however, but in the length of time he remained with it.

Robt. Overby read a paper on "Summer Complaint in Children." Although the doctor stated in the beginning of his discourse that he was no orator, the concensus of opinion among the doctors present was that there must have been an orator on the ground when the paper was prepared. It was a very fine paper dealing principally with the prophylaxis. It was well discussed by the society, all of whom complimented the paper very highly and it was closed by the writer.

It was moved and carried that we approve of the all-time health officer and are willing to lend our support toward securing same and that a committee be appointed to confer with the fiscal courts of Ballard and Carlisle counties in regard to the raising of funds for such a purpose. The committee appointed was as follows: Ballard, Robt. Overby, W. A. Page, S. R. Fairchild; Carlisle, J. F. Dunn, H. A. Gilliam, T. J. Marshall.

There being no further business the society adjourned. J. F. DUNN, Secretary.

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EDITORIAL

KENTUCKY'S CONTRIBUTION.

Kentucky is being asked to contribute $133,660 as its quota, of the fund to be raised from the sale of Red Cross Christmas Seals December 1 to 10. Readers should not confuse this campaign with the Red Cross fund already subscribed. The money derived from the sale of Red Cross Christmas Seals is devoted entirely to the war on tuberculosis, to the employment of visiting nurses, the establishment of dispensaries and sanatoria and to a general campaign of education by which the facts in regard to the curability and preventability of tuberculosis are made known.

Experience in fighting the plague has proven that its spread is due mainly to ignorance, carelessness and neglect on the part of those afflicted or those caring for them. These conditions the visiting nurse can and does correct, as is shown by the great decrease in the number of deaths and new cases wherever the little Red Cross Christmas Seal has sent the visiting nurse on her errand of instruction and mercy.

When one considers the fact that tuberculosis kills the producers, between the ages of 15 and 45 mainly, that its victims include the active men and women doing the world's work in home, office and shop, that it causes 150,000 deaths in the United States and more than 5,000 deaths in Kentucky annually, it would seem that the investment in Red Cross Christmas Seals is about the very best that one could make.

Since the institution of this method of obtaining money to aid in the fight against the spread of tuberculosis Kentucky has never failed to do a considerable part in furnishing the funds needed for that fight. No worthier charity, no nobler philanthropy ever appealed to our people. The use of the seals to decorate Christmas packages, too, makes it possible to put these little stamps to a good use.

In former years there were those who were so interested for one reason or another, some because of personal experiences, that they purchased more stamps than they could use. This year the Health Bond in denominations of $5 and up has been devised for such investors. Whichever is bought the money will be put to the best possible use.

These seals, costing a cent apiece, do more good for the money invested than any form of philanthropy of which the JOURNAL has knowledge.

A visiting nurse and dispensary in every county in Kentucky, under the direction of the ablest physicians obtainable are included in the plan of Dr. J. S. Lock, executive secretary of the Kentucky Tuberculosis Association, besides traveling clinics to go from county to county where needed in the fight against tuberculosis in the State, the objects toward the attainment of which the money received from the sale of Red Cross Christmas Seals will be devoted this year, if enough of the seals are sold between December 1, the day they are placed on sale, and December 10, the day the nation-wide and statewide drive will be completed.

Visiting nurses are needed badly in some counties where there are many cases of tuberculosis, a large number of which could be cured if given proper attention, to say nothing of the prevention of the development of other cases through proper care of patients, which the visiting nurse teaches. The death rate from tuberculosis and the number of cases have been greatly reduced wherever visiting nurses have been available and the sale of the Red Cross Christmas Seals furnishes the funds with which the Kentucky Tuberculosis Association fights the plague by sending the visiting nurse to the rescue.

A woman's far-reaching vision and her persistent belief in that vision brought into existence the Red Cross Christmas seal. More than a decade ago Miss Emily P. Bissell, of Wilmington, Del., then executive secretary of the Delaware chapter of the American Red Cross, read a paper written by Jacob Riis

about a Christmas seal issued in Denmark to raise funds for a children's hospital.

"Why not apply this method to America?" she thought as she read it.

Delaware's tuberculosis situation was becoming critical. More sanatorium facilities were sorely needed. Miss Bissell believed the Red Cross Christmas seal the solution of the problem.

It was difficult to convince others, but she persevered. Finally she found some friends willing to support her first venture. The results were far beyond her expectations. From an initial investment of $40 more than $3,000 came in from the first sale, and the Hope Farm sanatorium was given a substantial financial footing.

From that modest beginning the seal sale each year has grown by leaps and bounds. The 1919 campaign is for more than $6,500,000 so that the fight against tuberculosis may be waged more strongly than ever. A recent survey by the National Tuberculosis Association showed that in America 150,000 lives are snuffed out yearly by this disease and that there are more than one million active cases. Red Cross seals are a community's best health insurance. Make sure of your share.

OUR VICTORY AND OUR RESPONSIBILITY.

It seemed particularly appropriate that on November 11th, the anniversary of the day on which the great war finally ended, that the Court of Appeals should have handed down the final decision in the various litigations which have ensued since the passage of Kentucky's health code by the General Assembly of 1918. This decision finally seals the victory of the organized medical profession of the State in its fight for advancement in the protection of the public health. Excepting Ohio and Vermont, no other State has better health laws than Kentucky. It is now merely a matter of effective organization, of more money and additional trained personnel: More than all this, it is the securing of the cooperation of all the citizens of the State, and it must be recognized that this can only be done through the organization of County Health Departments, as provided in the new law.

The organized medical profession has sought this responsibility. Having won the fight, it must realize how great this is and must respond to the call of the times, actuated only by a determination to fully carry into effect the excellent provisions of the law.

It must always be understood that the health machinery of Kentucky is operated through the whole medical profession. It has frequently been charged that it was dominated by a small number of men. This must never be true. The members of the County Medical Societies must continue in the future, as they have in the past, to elect their delegates to the State meeting because they feel that they would be personally interested in doing the things that are right for both the profession and the people. The Delegates, when they come together to form the House of Delegates must continue to act, as they have heretofore done, in such a way as to command the respect and confidence of the people of Kentucky. A broad plan and a big program is essential if Kentucky is to develop as it should, and the medical profession of Kentucky is composed of the kind and caliber of men that can and will do the job.

In congratulating the members of the medical profession on this great victory, the JOURNAL especially urges that, mingled with our pleasure in this final vindication of all those things for which we have worked so hard, we shall recognize, each for all, our individual and collective responsibility for the efficiency of health work in our State.

FULTON COUNTY HEALTH DEPARTMENT.

The Fiscal Court of Fulton County is the first in the State which, by a formal resolution, has declared it is a County Health Department, thereby securing an all-time Health Officer. They have provided him with the maximum salary allowed by law, and the arrangements have been made by which he will conduct clinics for Tuberculosis and Venereal diseases, in conjunction with the members of the County Medical Society, in the towns of Hickman and Fulton each week. Dr. J. A. Phelps, of Hickman, has been selected as the all-time Health Officer.

Some twenty counties are seriously considering this important step with a view to following the example of Fulton county, but it will always be to the honor of the officers and citizens of this good county that they have been the first in this great field.

It is important for our physicians to realize that this could not have been done had it not been for the splendid organization of the Fulton County Medical Society and the thorough cooperation it has secured from the Red Cross, the County Health League and other influential organizations.

The State Board of Health is ready to send its representatives to help the people of any county in the State, who desire to organize so that they can secure the benefits of modern sanitation in their counties.

LINCOLN COUNTY PROGRESS.

A recent issue of the Standard Interior Journal, brings to our desk a report of Miss Georgia Frederiek, the Public Health Nurse of that County.

Among other things in the course of a month, she had twelve water supplies examined, made visits to 23 eases of Typhoid Fever, helped the families in the care of the patients, showing them how to prevent the spread of the disease by the proper disposal of the exerement. She examined 377 school children and found 31 with tonsils and adenoids that made it impossible for these children to make progress in school. She also found 44 trachoma cases in acute contagious stages.

Miss Frederiek is paid by the Fiseal Court and the Red Cross. She is provided with a Ford coupe, so that she ean get about over the County.

Several years ago Dr. J. G. Carpenter was the President of the Kentueky State Medieal Assoeiation. During his presideney, he earried on a protracted campaign in every district of Lineoln and the adjoining counties, as an apostle of publie health. It is a delight that he is a living witness of the work being done by a public health nurse in Lineoln county, and it is good to know that his own people followed his adviee to their benefit.

INFLUENZA VACCINE.

There have been very few actual cases of influenza reported in Kentueky this year, and a number of teehnical diffieulties have delayed the development of some of the most import- and strains for making the best all-Kentueky vaceine.

The laboratory is ready now, in case there is any serious development in any county to supply enough vaccines for the emergeney, and orders will be filled with the new Kentueky vaccine whieh is now ready in unlimited quantities.

"MISCELLANEOUS NOSTRUMS."

"Miscellaneous Nostrums" is a new publieation just out from the press of the *Journal of the American Medical Association,* No. 535 North Dearborn Street, Chieago. It eosts twenty cents, and it would be worth many times this amount if each physieian in the State would get a eopy and put it in the hands of some friend who is conducting a newspaper or a ehureh or some other influential organization.

Many interesting and readable stories of the outrages perpetrated on the ignorant and unsuspeeting sick is shown in these pages. It is one of the reeent propaganda publieations that are really worth while.

SCIENTIFIC EDITORIALS.

SHALL WE USE X-RAY IN LUPUS?

X-ray has been used so largely in the treatment of lupus vulgaris and lupus erythematosus that the eonelusions reached by various observers may well be of interest.

Our own experienee with lupus vulgaris has been that a few moderately heavy doses at the beginning may be of considerable value, but that the ray soon loses its effeet, if it does not become aetually harmful and protraeted courses of roentgen-therapy should not be earried out. In lupus erythematosus, we found, the lesions are apt to become more active, even from a few rayings.

There are some operators who are stauneh supporters of X-ray in lupus. Wild gives 62 per eent of good results. Sehutz holds it a wonderful remedy for hypertrophie forms though in flat ones he found it useless. On the other hand there are many who consider it a dangerous agent as tending to eause malignant degeneration. Sinee lupus may beeome eareinomatous even when entirely untreated it is hard to determine to what extent the X-ray may be responsible for case degenerating under this treatment. This question has been quite widely diseussed. Silverstein, in the extensive Juliusberg elinie in Posen, states that out of 111 eases of lupus there were 20 cases of careinoma with the history of preeeding radio-therapy. The length of treatment varies from 2 months to 5 years. Spiegler is of the opinion that sinee the advent of radiotherapy the oecurrenee of epithelioma has inereased. Sequeira is also of the same opinion; out of 964 lupus eases the latter found only 14 cases of epithelioma or 1.5 per eent. Six out of these eases were eonstantly exposed to the weather, and it is probably that the eareinomatous change was favored by the mechanical irritation of the elements, so in the long run the pereentage would be less than one.

It has not been decided whether the neoplasm arises from the lupus tissues itself or whether it arises from tubercular tissue surrounded by scar tissue; in other words whether it is a lupus earcinoma or a sear-eareinoma. The majority of investigators maintain that ehronie inflammation is the reason for the malignant change; this seems quite plausible; in two eases we have seen the

chronic inflammatory process result in atypical epithelial proliferation, which readily became carcinomatous. Another etiological factor which must be considered as a cause of lupus degenerating into carcinoma is long continued mechanical and chemical treatment.

In view of these findings we should be extremely cautious in deciding upon the employment of roentgen-therapy in lupus. In our own hands the ultraviolet rays from the quartz-mercury vapor lamp has been decidedly more satisfactory.

M. L. Ravitch and S. A. Steinberg.

ANNUAL ORATIONS

OVERSEAS OBSERVATIONS.*

By Irvin Abell, Louisville.

I would be derelict in my appreciation of the honor conferred on me by your invitation to deliver jointly with Dr. Barrow the Annual Oration, did I not begin by earnestly thanking you for the privilege of addressing you and at the same time acknowledge the willingness of my efforts and the consciousness of their shortcomings.

I had the pleasure of being in command of U. S. Army Base Hospital No. 59 from April 16, 1918, until April 9, 1919, spending eight months of this time with the American Expeditionary Force in France. As the officers of this organization were recruited largely from the membership of the Kentucky State Medical Association and the nurses from Kentucky State Nurses' Association, I feel that a brief description of some of the problems connected with our work and a relation of some of the observations made while serving in the Advanced Section of the American Front might be of interest to you.

Personal contact with the battle area of the recent struggle convinces one of the truth of the aphorism regarding war credited to General Sherman. Its pomp and glory grow in inverse ratio to the distance from which one observes it, while its pity and pathos, its destruction and devastation, its death and desolation, its long hours of arduous labor in zones fraught with danger impress one with its gravity and seriousness and with the enormity of the load upon the shoulders of those responsible for its origin. The work of the Medical Department was to save and to salvage, not to wreck and destroy; to give to the sick and wounded the benefits and comforts of modern knowledge and skill to the greatest degree compatible with its environment and situation. To do this, in addition to the members of the Regular Corps, 26,902 physicians and 21,480 nurses, representing the flower of their professions, entered the service from civil life, unselfishly devoting their time and energy to the work of the Medical Department. For the first time in history, the up-to-date operating room with its skilled operators, trained assistants, competent nurses, and scientific equipment was established immediately behind the fighting line, where the wounded could receive prompt attention. The field, mobile, and evacuation hospitals in the American Sector were at accessible distances back of the line, mostly beyond range of artillery fire, all within range of the ever-present menace of hostile airplanes. The base hospitals were situated, some in the advanced section, within fifteen to thirty miles of the line, the remainder at various points along the lines of communication, which extended from the eastern border of France, known as the Western Front, through its interior to the base ports on its western coast. At the time of the signing of the Armistice, 153 American hospitals were in operation, extending from the fighting line of the Argonne-Meuse Salient to the base ports of Brest, St. Nazaire and Bordeaux. The sick and wounded from the battle-fields were collected at the First Aid Stations, situated immediately back of the firing line. From here, they were sent by stretcher, ambulance, or hospital train to available Field, Mobile, and Evacuation Hospitals. During pushes or drives these were variable beehives of activity; and, as the Allied drive during the latter months of the war was continuous, there was an ever-incoming stream of sick and wounded. Great executive and administrative ability and ingenuity were displayed in the organization and operation of these hospitals. Team-work was the key-note, the patients passing consecutively through the hands of the examining teams in the receiving wards, preparation teams, shock teams, X-ray teams, operating teams, fracture teams, finally reaching the hospital wards, from which, as soon as their condition permitted, they were sent by train to hospital centers in the interior of France to make room for the hourly new arrivals. In this way, teams, or sets of teams, did continuously the same character of work, some examining patients, triaging them, to use a borrowed French word; others treating shock only; others preparing wounds for operation; others locating missiles with the X-ray; others splinting fractures; others operating; others caring for gassed cases; others evacuating patients; collective-

*Delivered before the Kentucky State Medical Association, Ashland, September 23, 24, 25, 1919.

ly becoming proficient in the expeditious care and handling of the sick and wounded. As the work was continuous, teams worked in shifts, the hours of work depending on the number of teams available. Where the number permitted, they worked on eight-hour shifts, otherwise on twelve-hour shifts, and in exceptional instances for even longer periods. In one hospital which I had the pleasure of visiting, Evacuation No. 8, eighteen operating tables were kept going continuously, the teams working in twelve-hour shifts, 8 a. m. to 8 p. m, and 8 p. m. to 8 a. m. In this hospital during the push of the last week of October, between three and four hundred operations were done in each twenty-four hours. This hospital was accessible only to ambulances, being situated some distance from a rail head and quite close to the lines. Some of the equipment was obtained from captured German trenches and dugouts. This included a piano whose notes seemed strangely out of place amid the deafening roar, as an artillery barrage carried the greeting of the Yanks to the retreating Boche.

The enlisted men of the Medical Department did heroic work in hospitals and as stretcher-bearers and ambulance drivers. At night, and these were usually dark and rainy, with no light other than an occasional glimpse of the moon and the ever-present glare from gun-fire, they sought their way through forest and field over badly torn roads, bringing their loads of sick and wounded comrades to the help they needed so badly.

The hospitals in the Advanced Section were housed mostly in wooden barracks and tents. Some had glass window panes, many had none, the openings serving as windows being covered with a translucent non-transparent oiled fabric.

As no lights were permitted to be shown in Advanced Section, all windows and doors were draped with blankets or burlap, lest escaping rays of light illumuine a target for marauding airplanes.

Those of you familiar with the odor of gas gangrene will appreciate the discomfort of working through the night in operating rooms contaminated with this stench with no opportunity for ventilation until the approach of daylight.

Base Hospital No. 59 was located in the Advanced Section at Rimancourt, being one of five hospitals comprising this center. Nearly all patients were received at this center in hospital trains, as many as 1153 having been admitted in a twenty-four-hour period. Most of the trains arrived at night, and the task of unloading them and delivering patients to the wards in the dark, often in a downpouring rain, was one beset with difficulties. The American hospital trains were models of comfort and efficiency, each carrying from 360 to 610 patients. They were equipped with comfortable cots, clean linens and blankets, food, heat, toilet and bathing facilities and were manned by well-trained crews and nurses under command of a medical officer. They were numerically insufficient to transport the large number of sick and wounded, being supplemented by French trains. Some of these were primarily intended for hospital trains; and, while not as well equipped or capacious as the American ones, they were still fairly comfortable: Others were converted freight trains, composed of box-cars in which had been erected standards upon stretchers could be hung. They were not heated and were not provided with food, drink or blankets.

This is not a criticism, merely a statement of actual conditions produced by the exigencies and demands of a long and trying war. Time, men, and material were more urgently needed for work other than the building of hospital trains by the Nation that gallantly bore the brunt of the conflict. Nevertheless, the Medical Department, up until April 1, 1919, had handled safely over 298,000 American sick and wounded on hospital trains, American and French. Since the battle casualties were all admitted to hospitals in the Advanced Section and since from the proximity of the theatre of war activity it was undesirable to establish large hospital centers in this area, the base hospitals were congregated in groups in the interior of France, from five to ten hospitals, with a capacity of ten to twenty thousand, constituting a hospital center. Most of these were of wooden construction, but many were fortunate enough to be located in resort hotels or in stone barracks, which, while not primarily intended for hospitals, were readily adapted to such usage. The sick and wounded were evacuated from the Advanced Hospitals as soon as their condition warranted travel on hospital trains. Our experience demonstrated that patients, although severely wounded and subjected to operations of major magnitude, could be safely carried on such trains within a very few days after hospitalization.

The large number of patients admitted in October, as a result of the continued Allied drive, so greatly decreased bed space that the accommodation of further patients became a serious question. Daily reports of available beds were made by all hospitals, so that the department in charge of the distribution of patients was constantly informed of vacant beds in each institution. The shortage of beds

became so acute in October that by the third week only seven thousand beds were available for the further reception of patients, not enough to take care of the patients resulting from one twenty-four hour period of intensive fighting. This deficiency was met by the erection of tents, each accommodating sixteen to twenty beds. Base Hospital No. 59, while nominally a one thousand-bed hospital, increased its capacity to twenty-five hundred by this means. The lack of beds and matresses was overcome by the use of cots and blankets, supplementing these with ticks filled with straw when obtaintable. Until near the close of hostilities, we were without laundry facilities, consequently, we were unable to use sheets. Later, this deficiency was remedied by the erection of a steam laundry, after which clean linens were abundantly provided.

The stress and strain of caring for such a large number of patients and the urgent necessity of making room for new arrivals by evacuating to the rear those capable of being transported were so great that the work in front-line hospitals consisted largely in bathing and delousing, furnishing clean clothes, warmth, food, shelter and such medical and surgical attention as was urgent.

Stoves and fuel were scarce and obtained with difficulty. Such coal as was to be had cost thirty dollars a ton; and the wood, which was green and burned poorly, cost twenty-eight dollars a cord. Owing to the advanced location, there were no markets in which to buy foods for the sick, the patients being limited to the rations supplied by the army.

While these were abundant, good, and wholesome, they did not permit of giving the critically ill the delicacies supplied such patients in civilian hospitals. Eggs were not to be had at any price, other than the few obtained from neighboring peasants, who, while refusingto sell them for money would exchange them for fats from our mess.

The Red Cross generously aided us by donating cocoa, chocolate, and dainties from which light, appetizing dishes could be prepared. The work in these hospitals was done in a regular routine manner, as only in this way could the large volume be handled. Schedules were prepared and rigidly adhered to, always on the principle of the greatest good to the greatest number. Meals were served promptly and expeditiously. I remember that in our hospital we were able to feed eighteen hundred patients in one hour and ten minutes. Burial services were included in the routine and were held at four p. m. each afternoon for all patients who died in the hospital during the preceding twenty-four hours. The bodies, each in a clean uniform and enclosed in a pine box, were carried on trucks to the adjacent cemetery, where, after placing them in a long trench, the army burial service was read by the chaplain; and, with the guard at attention, taps was sounded as mother earth claimed those, the declining sun of whose lives had set on a foreign soil hallowed by their sacrifice, supreme and final, in the service of their country.

While the duties of the Medical Department were con-combatant ones, appreciable danger attended their fulfillment. Of the Medical Corps, 559 officers were killed in action or died of wounds or disease; three nurses were wounded in action, while 266 died from other causes during the war, 164 in this country and 102 overseas.

Too much cannot be said in praise of members of the Army Nurse Corps. Entering the Service invariably at financial sacrifice, they gave to it that tender ministration to the sick and wounded which only the heart and hand of woman can give. Forsaking the comforts of home, living in the mud and rain, poorly housed with inadequate heat, subsisting for long periods on canned foods, working long hours, she was ever a comfort and inspiration to the sick and wounded! a solace to the soldier in his illness! a joy in his convalescence: and in his departing hours, a consoling friend to whom he intrusted his last message to mother, sweetheart, or wife.

If Florence Nightingale, who, in the Crimean War, initiated the practice of women nursing sick and wounded soldiers, could know of the work of the Army Nurse Corps, great indeed would be her mental compensation and gratification!

It cannot be said that the experience of the Medical Department, though enormous in aggregate, has added much that is new to our surgical knowledge. The evolution of surgery during the last fifty years had led to the development of an aseptic or clean technique, with the result that infections and suppurations had been in large measure eliminated from civil practice. Practically all war wounds were contaminated with highly virulent bacteria giving rise to disastrous inflammatory processes. In the effort to prevent and control these, the surgical pendulum apparently swung backward, in so far as the employment of both new and long disused antiseptics again found many adherents. Comparatively few of the wounds were clean perforations made by machine gun and rifle bullets: the vast majority were contused and lacerated, made by explosive force of bullet, shrapnel, or fragments of high explosive shells there being an appreciable zone of devitalized tissue lining every part of the wound surface.

This devitalized tissue furnished an admirable pabulum for the growth and development of the ever-present organisms. Probably the greatest value of the Dakin solution, as employed in the Carrel method, lay in its ability to rapidly digest and remove this devitalized tissue with its contained germs. The bitter and disastrous experience in the early part of the war resulting from carrying such patients back to zones of safety before subjecting them to operation led to the establishment of the before-mentioned operating amphitheatres immediately back of the fighting line, where early surgical attention prevented or attenuated the virulent infections. Thorough dissection and removal of foreign bodies were carried out; but few such wounds were closed, although when opportunity was offered to operate on them soon after their infliction, primary closure showed union by first intention in a fair percentage. The necessity of evacuating such patients to the rear prevented close observation and rendered the procedure one of doubtful advantage, since by the time such patients reached their destination at a base, suppuration and gangrene had become oftentimes so firmly established as to imperil limb and life. At the close of the war, the application of surgical principles established in civil practice, cleanliness and thorough dissection of disintegrated tissue, were relied upon in preference to dependance upon the many antiseptics, new and old, that had been given trial. This is the first war in which gunshot wounds of the abdomen have been routinely subjected to operation. The good results obtained in civil practice led to the abandonment of the expectant treatment heretofore practiced in such war injuries. The opportunities for early operation were at hand, and the results have been those which our experience in civil practice led us to expect, the mortality being cut over fifty per cent.

In the treatment of shock, morphine for pain, external heat, and the retention of the alkalinity and viscosity of the blood by transfusion of blood or gum salt solution was the routine. Owing to the admirable arrangement of special teams for special work, all shock cases were treated by shock teams, so that no patient was subjected to operation until appropriate treatment had produced the desired resuscitation. Nothing new was evolved in the treatment of tetanus, but rich experience demonstrated the necessity for a second dose of the immunizing antitoxin; otherwise, with the passage of the immunity conferred by one dose, infection occurred from spores which had found lodgment in some wound niche. Gas gangrene, which is relatively rare in civil practice, was widely prevalent in war wounds. The knowledge gained from daily contact with it disclosed that the infection is limited to muscle tissue and that the complete removal of the affected muscle resulted in its control. At the close of the war, patients were receiving routinely an immunizing injection of combined tetanus and gas bacillus serum. In the American army, sufficient data had not been collected to demonstrate its worth as a protective measure; but the French, who originated it, reported it as well worth while. To me, the most interesting new work was that done on the lung. The fear of lung collapse, unless operative work was undertaken in a special cabinet designed to equalize the pressure of the atmospheric air with that within the lung, had retarded the development of lung surgery. War experience demonstrated this fear to be more fancied that real, as no ill effects were noted following open operations on the lung for the extraction of missiles and the control of hemorrhage. The mortality was not high, and many patients were saved who, under the old regime, would have been lost from hemorrhage, abscess, or septic pneumonia. The huge number of fractures treated, practically all of which were compound, served to confirm the principles which had long obtained from experience in civil practice. The Thomas splint afforded a most satisfactory appliance, both for treatment and transportation of such cases, both ambulatory and lying. In the latter cases, the Balkan frame served as a useful, comfortable, and convenient addition both to patient and attendants. The "shell shock" cases represented definite psychoses and neuroses in patients whose nerve mechanisms were primarily unsuited for the stress and strain of war activities. Following the Armistice, the incidence of such cases increased one hundred per cent, probably due to the fact that cessation of the arduous and laborious work of active campaigning gave time for reflection upon disagreeable and harrowing experience and that at this time homesickness became, with many, an obsession.

The casualties that were new to all of us and for the relief of whose suffering but little could be done were the poison-gas cases. From crude methods in the early stages of the war, the employment of poison gas had become at its close an art, terrifying and repugnant in its every aspect. Gases which produced such intense lachrymation and burning of the eyes as to render them useless for the time being; gases which caused such violent sneezing that every other physical effort was held in abeyance; gases which when uniting with the moisture and perspiration of the body blistered and burnt with varying degrees of severity, even to the extent of producing gangrene; gases which rapidly caused death

by action on heart muscle; gases which on inhalation produced varying degrees of irritation of the respiratory mucous membrane, the severe ones resulting in death in a few hours from pulmonary oedema, others in death after a few days from a secondary infective broncho-pneumonia, the milder cases escaping death but showing subsequent chronic bronchitis and disordered heart action, were used with devilish ingenuity. The severity of both immediate and after results of mustard-gas inhalation was such that only the mildest cases could be returned to active duty, the remainder being given the lightest of duty, carried as hospital patients, or sent back to the States. It is the belief of the officers of Base Hospital No. 59 that many of these patients are permanently unfitted for work calling for marked bodily activity, and further, that the injury to lung tissue greatly predisposes to the development of pulmonary tuberculosis. As one worked day after day with splendid specimens of American manhood, seeing severe types of illness and wounds of all degrees, from those simple in character to those of the most horrible, mutilating types, one rarely heard a complaint. In the receiving wards, where one or more hundreds of wounded were awaiting their turn in the operating room, one would hear requests for water, for cigarettes, occasionally for an opiate, but never a murmur or criticism. Anxious to know of the success of the military movement in which they were engaged, solicitous for the welfare of their companions, often suggesting that they themselves wait until a nearby companion had received attention, even when their own injuries were of fatal character, the American soldier lived up to the best traditions of the Anglo-Saxon race. The spirit of give and take, giving the best that was in him, taking things as they came; the admirable self-sacrifice; the ever-present regard for his fellows; the wonderful immolation of self upon the altar of patriotism were most inspiring. And it is hardly conceivable that one could witness such splendid demonstrations of truly noble qualities without being broadened in spirit and becoming thereby a better man and a better citizen.

The war territory presented an ever-changing picture of multiform activity, and passage through any part of it revealed a kaleidoscope panorama of absorbing interest. The roadways of France are durably constructed of macadam formation and lined by rows of beautiful trees. As one approaches the war zone, the fields which were still undisturbed by shell holes, trenches, or barbed-wire entanglements, although in sound of the guns and in sight of war's red glare, were still being peacefully cultivated by peasants, aged men, women and children, seemingly undisturbed by the proximity of the greatest cataclysm known in the history of the world. Entering the lines back of the battle-fields, one was impressed with the oft-stated fact that it required five men in the rear to keep one on the firing line. In addition to medical attention, they required food, clothes, transportation, and the implements and munitions of war had to be supplied them. Ammunition depots containing thousands of shells were met with in each supply region; motor parks employing hundreds of men, mechanics and drivers, devoting their time to motor cars and trucks; repair shops; hundreds of tires piled in rows; gas and oil stations passed in view. Immense quartermaster storehouses, rail heads, great airdomes from which our planes went forth to observe, patrol, bomb, and fight, presented scenes of orderly activity. By the time one advanced far into the lines, he realized he was in the war zone proper. The beautiful roads had disappeared, the remaining ones being badly torn and in process of repair by Boche prisoners. In many places the roads were so cleverly camouflaged by artificial and natural screening that an entire supply train might pass by at a short distance totally unobserved. The trees showed the effects of gun-fire, all splintered and broken, stripped of their limbs and foliage, standing as mute evidences of its terrific efficiency. Bodies of fresh troops were met going forward to the fighting line, and similarly battle-weary regiments returning to the rear for a much-needed rest. Groups of prisoners, for the most part weary and dejected in appearance, passed by under guard on their way to the stockades. Along the shell-torn roads passed an unending line of trucks of all sizes shapes, and condition, most of them weirdly camouflaged. As no lights were permitted in the lines at night, many of them came to grief, being ditched or upturned, a fallen prey to the fortunes of war. On a trip to the Evacuation Hospitals in the Argonne, the travel was altogether by motor and most of it was done at night. I have a most vivid recollection of its difficulties, of shell-torn roads, of signal star shells, of the deafening noise of the guns, and of the illumination of the heavens by their fire. This latter was remarkably beautiful, even if terrible and terrifying. With no moon, with no stars, other than the red, white and green ones sent up as signals, the horizon was momentarily lighted up by the flash of fire, followed by the boom, as the missile pregnant with death and destruction went on its way to the lines of the Boche. The brightness of the light and the intensity of the noise varied with the size and number of guns fired, the illumination of the horizon

reminding one not of sheet lightning, but rather of the glow observed during the humid, oppressive period preceding one of our summer storms, the crash rising and falling in cadence as batteries fired singly or in unison. As a barrage was laid down, the noise became deafening, the earth trembled under one's feet, and the horizon for miles was brilliantly lighted as if by a forest fire. In this district, devastation was complete. What once had been picturesque towns were but crumbling ruins. In some, not even a trace of a street was to be seen and hardly a wall found standing, while others presented varying degrees of destruction. Once beautiful cities, from whose desecration the inhabitants had fled, soldiers now quartered in such buildings as would afford shelter; homes; business houses; large manufacturing plants, many evidently once possessing beautiful design. showed all degrees of demolition, from the through and through perforation of missiles and shattering due to shock of exploding shells to the absolute destruction of direct hits. The landscape in all directions showed trenches, dugouts, barbed-wire entanglements, and shell holes, giving to it at a distance the appearance of a crazy quilt. As the enemy had been in possession of some of this territory for two or more years, his trenches and dugouts gave evidence of preparation for permanent habitation. Some of the dugouts were many feet below the surface, tunneled out of solid rock, and accommodated one hundred men. Others were concreted, reinforced with steel, well lighted, and furnished with booty taken from French homes, beds, chairs, pictures, pianos, in fact all the comforts of home. The trenches in many places were built of concrete or brick, reinforced with steel, provided with telephones, and protected in front with many varieties of wire entanglements. In passing the many cemetaries wherein repose the bodies of liberty's valiant defenders, the lines of Theodore O'Hara's Bivouac of the Dead came repeatedly to mind. Surely glory guards with jealous rounds the last resting place of those who gave their lives for the preservation of high ideals.

Entering Verdun by the Sacra Via, the highway made famous by reason of its having been the only supply road for the French armies during their historic defense; passing through the shadow of the vale to the citadel, a stronghold dating back into the dim vista of years; standing on its ramparts with the destroyed city at one's feet, with German shells still falling within its confines at regular intervals, after having withstood their bombardment month upon month, with battlefields within range of vision upon which more than one million casualties had been inflicted, one could not but be impressed with the horrors of war; filled with sorrow at the loss of so many gallant poilus; regret and sympathy for the civilians who lost all they possessed, home and loved ones; and with indignation and resentment for the maddened ruler who, with insensate ambition and greed, precipitated a war of acquisition. Later, in conversation with a cultured French woman, in telling me of the loss of those near and dear to her in the battles that raged around this fortress, she stated that Verdun would be known as the Tomb of France; on the contrary, it will stand in the centuries to come as a monument to the indomitable courage and heroic resistance of her sons, whose slogan, "*On ne passe pas*" "He shall not pass," will be forever cherished as emblematic of their undying spirit.

Now, that the great conflict is happily ended in glorious victory for the Allied Cause, we, the survivors, have returned to our homes and communities to again pick up the threads of our life work, so rudely broken by the clarion call of war, each happy in the great privilege that has been accorded him in having given service to his country. We tenderly hold in grateful memory those of us who silently rest in the hills and dales of foreign soil and those of us consigned to their final sleep in our own beloved land, trusting and believing that as they have passed into the Great Beyond, their supreme sacrifice has merited the welcome "Well done, thou good and faithful servant! Enter into the home prepared for you."

OVERSEAS OBSERVATIONS.*

By David Barrow, Lexington.

As I am to address civilians as well as doctors to-night, I deem it best to eliminate all things technical and not limit my remarks to those things of interest only to the medical profession; nor will I speak in detail of my own activities as a member of the Medical Reserve Corps, but will tell you of an Organization, almost wholly a Kentucky organization, that I was given the privilege of forming, and for which I have great admiration, and for the personnel very kindly feeling—officers, civilian employees, nurses and enlisted men.

Necessarily what I say must be said in general terms, for should I attempt in detail to tell you of the activities of the members of Base Hospital No. 40, it would keep you here too long, and for me, would be a task I could only imperfectly perform. To Kentuckians, I hope something of Kentuckians will be of interest.

*Delivered before the Kentucky State Medical Association Ashland, September 23, 24, 25, 1919.

In June, 1917, the organization of Base Hospital 40 was authorized by the Surgeon General: Lexington, Kentucky, was the home, and the Good Samaritan Hospital, of that place, the Parent Institution, all Base Hospitals being, at that time, sponsored by some Medical School or Hospital.

The organization was placed in the hands of the American Red Cross Association, Col. Jefferson R. Kean, then in charge, and was projected on the basis of five hundred beds, the personnel to comprise twenty-three officers, sixty-five nurses and one hundred and fifty enlisted men.

In December, I was instructed to change the organization on the basis of a thousand beds, requiring thirty-three officers, one hundred nurses, five civilian employees and two hundred enlisted men, which change was inaugurated.

Late in December, 1917, the organization had been completed, and was so reported by the Red Cross, and turned over to the Surgeon General's office as ready for foreign service. At this time, practically all of the officers were on duty, either at schools for special instruction or at cantonment hospitals, but the nurses, the civilian employees and enlisted men had not been called to active service.

February 20, 1918, Captain Virgil E. Simpson, of Louisville, the Adjutant of the organization, was ordered to Lexington to mobilize the hospital corps, and on March 1st, he, with the men, reported for duty at Camp Taylor. The men were assigned to the Base Hospital, and the instruction received was most valuable; they were on duty in the laboratories, X-ray department, operating rooms, as ward masters, as orderlies, as cooks, etc., and besides they received considerable military training.

March 26, 1918, Major Leonard S. Hughes, M. C., was appointed the Commanding Officer, and was ordered to Camp Taylor, an order for the mobilization of the entire Unit at that place having been issued. About April 1st, all officers were assigned to duty at the Base Hospital, and in each department of the hospital, the Unit was represented; in fact, the Base Hospital at Camp Taylor was largely manned by these officers. The nurses were also assigned to active duty early in April, some of them to Camp Taylor, and others were sent to Hospitals at Camp Dix, Camp Sherman, Camp Devens, Camp Greene, Camp Lee, Camp Meade and Camp Upton. So by June 1st, due to the wise forethought of the Surgeon General, each member of Base Hospital 40 had received special training, and as an organization was prepared to take charge of a hospital.

June 18, 1918, the officers and enlisted personnel entrained for Camp Mills by special train, arriving there on June 20th. The nurses and civilian employees had been ordered to the Holley Hotel, New York City, from the various cantonment Base Hospitals, and had arrived several days before the officers and enlisted men. From the Holley Hotel, they were assigned to comfortable quarters until ordered overseas; in the interval, the uniforms were being made and fitted by the Red Cross, and in the afternoons, at the Armory, they were drilled and given military instruction. At Camp Mills, the officers and enlisted men lived in tents, had no unusual hardship, and on July 5th, embarked from Hoboken for overseas.

The organization at embarkation consisted of thirty-nine officers, two hundred and twenty-one enlisted men, twenty-one having been added before leaving Camp Taylor, also several officers, one hundred and seven nurses, seven casuals having been added to the nurses, and five civilian employes. Thirteen officers with the enlisted men were on the S. S. Scotian, and on the S. S. Louisville were twenty-six officers. The nurses and civilian employees were not in the convoy, they leaving on the S. S. Olympic, July 12th, arriving at Southampton July 19th. Those on the Scotian reached Glasgow on July 17th; those on the Louisville, Liverpool, July 17th, the convoy being split, off the coast of Ireland, some ships going to Glasgow and some to Liverpool. The trip across was uneventful, no excitement of any kind, and although crowded, every one seemed happy. From Glasgow by train to Southampton to the Rest Camp, arriving July 19th, and in Liverpool, the twenty-six officers were sent to Knotty Ash Camp. The nurses were sent from Southampton dock to Salisbury Court, only six miles, by trucks, reaching there July 20th, 1918, the officers and men at the Rest Camp went out on the 22nd, and the officers from Liverpool arrived on the 30th.

After some days the officers were assigned to duty in English and American Hospitals in England, and soon the nurses were sent to Hospitals in England. The Unit was scattered. Unfortunately, the buildings at Salisbury Court were under construction and not ready to receive patients, and the personnel of the hospital was used at other places. This was the fate of nearly all Base Hospitals sent overseas, rarely was its own hospital ready, and even when ready, for some reason many officers were detached and placed on temporary duty elsewhere. Why expend so much time and care in organizing a Base Hospital on this side, and the requirements were most exact, and then break up the or-

ganization on the other side, I have never seen the wisdom of.

On arriving overseas, all expected to be sent to France, and there was disappointment when the organization was stopped in England, but at that time the Germans were driving for the channel ports, and it was necessary to be ready to care for the wounded. Five Base Hospitals were held in England at the time we were, so evidently those in authority thought the necessity great.

In September some of the officers and nurses were recalled, and the hospital was first opened for admission of patients on September 27th, 1918, one hundred and twenty-five cases being admitted on that date.

After the signing of the armistice the plans of the hospital were curtailed. The original plan was for three thousand beds but was reduced to one thousand, and Base Hospital 40, most of the personnel being recalled to Salisbury Court, functioned as a thousand bed hospital until ordered back to the States in March. When ordered home, many of the members were detached and sent to duty in France; going over there were 372 in the organization, returning about 140.

Shortly after reaching Salisbury Court, I was ordered to Queen Alexandria Hospital, London, for temporary duty. In the operating room I was associated with English, Scotch and Australian surgeons, the association was most agreeable, and we had much interesting surgery. During my stay in London, one day Sir Arbuthnot Lane took me to Queen Mary's Hospital at Sidcup, an automobile ride of about ten miles. There I found English, Australian, Canadian and Welch Units devoting most of their attention to reconstruction and cosmetic surgery. The plastic and osteo-plastic work was truly remarkable. Horrible deformities of the face were so changed that it would have been impossible to identify the patient before and after operation as the same individual. Skin and mucous membrane tightly fastened to bone by cicatricial tissue was mobilized and prevented from forming new attachments by the use of epithelial inserts. New jaws, noses, ears and eyelids were commonplace. Of course, in many cases, as in most plastic work, many operations had to be done on the same patient.

From London I was sent on an observation tour of Evacuation and Base Hospitals in France, near the front, the St. Mihiel drive then being in progress. Operating teams from Unit 40 were sent to France at the same time, and from this date until the armistice was signed, the operating teams had all the work they could handle, for the daily hammering at the Hindenburg line meant many casualties.

At Evacuation Hospitals Nos. 1 and 12, near Toul, I saw many interesting surgical cases, and at each place, eight or ten operating teams were continuously on duty. The patients received treatment in these hospitals several hours after the wounds were received, and I was much impressed by the thoroughness of the work done by some of the operators. At Toul, I was some days at Base Hospital 45, and from this Hospital was ordered to duty at Base Hospital 108, located about twenty miles away at Bazoille. This Hospital was one of a number in a very active Base Hospital Center, the work was strenuous, and one day we received and evacuated more than two hundred and fifty patients. Lieut. Col. John B. Walker, of New York City, was a most efficient commanding officer, and after several weeks spent with him, I received orders to return to our own hospital in England.

While in France I was impressed with the ease and speed with which the injured were sent from the evacuation hospitals to the Base Hospitals, and from the latter to the convalescent centers. Though I had read and studied about debridement, I had no true conception of this method of handling wounds until I saw it carried out. Debridement means cleansing the wound of all dirt and debris and excision of all devitalized and contused tissues. So far as possible the excision is along anatomical lines, but in many cases in order to prevent infection and save lives, the anatomy must be partially at least disregarded. Diminished function is better than a lost limb or life. Practically all wounds were debrided, including those complicated by comminuted fractures of the bone. The skin and subcutaneous tissue did not have to be sacrificed as much as the deeper structures. The only wounds that were not heroically debrided as a class and yet which often healtd nicely were certain types of joint injuries and injuries of the face. Wounds of the face, because of the rich blood supply, usually healed nicely no matter how filthy, if thoroughly cleansed. These wounds, moreover, often were treated by primary suture. On the other hand, all debrided wounds were left open. If gauze was used it was not packed in, but only loosely applied.

At the Base Hospitals the Carrel-Dakin treatment was instituted, or some other antiseptic method, and when the bacterial count of the unhealthiest portion of the wound was low enough, the wound surfaces were approximated with sutures. After this the wound usually healed per primam.

Debridement was not practiced by the surgeons of the allied armies in the early part of the war. However, it rapidly became the

most successful treatment, not only against ordinary pyogenic infection, but against tetanus and gas gangrene. More efficacious, of course, against gas gangrene than against tetanus. The latter disease was almost prevented by early and repeated doses of antitoxin. In the early period of the war, antitoxin was not used as a routine measure, both because its value as a prophylactic was not fully appreciated, and also because the supply on hand at that time was rapidly exhausted.

To debridement and tetanus antitoxin is due the credit for saving thousands of lives, for the soil of France was simply teeming with the bacilli Welchii and mallei, since no country in the world has been cultivated and fertilized more intensely than has France.

Wounds of the chest were often treated by open operation. The surgeon resected ribs and entered the thoracic cavity to remove foreign bodies with the same sang froid we have felt for several decades in doing laparotomies. Collapse of the lung does not endanger life as we believed before the war and tried to provide against by intratracheal anaesthesia and different forms of unhandy and expensive Vacuum cabinets.

The Thomas splint became the choice of all immobilizing apparatus and splints for the lower extremity. It is simple, inexpensive and light, and lends itself admirably to the treatment of compound fractures. It is the best splint to use in evacuating patients rapidly, and when used with the Balkan frame, at the Base, allows the patient great freedom of motion, and for that reason is one of the best preventive measures against the bed sore and adds greatly to comfort.

In every evacuation hospital there were one or more splint teams composed of skilled orthopedic surgeons. As soon as the surgical team had debrided and dressed a compound fracture wound or dressed other wounds when there were fractured bones, the case was passed on the splint team. This wise division of labor was an important factor in the rapid evacuation mentioned above. There were orthopedists wherever I went, and the excellent work done by them impressed me greatly. Certainly the training of these men in the Army will prove a great boon to the civilian population, after returning to their respective localities.

I regret that time forbids my devoting more consideration to the methods of treatment mentioned above, and others, for each and every one of them deserves a volume. Surgeons know better now from the lessons of this horrible war how to treat the injured so common in our age of machinery. Lives will be saved and useless limbs made useful.

It was a wonderful experience for all who volunteered, and I have yet to meet the doctor who regrets entering the service. I have however, seen few who served in the Medical Reserve Corps who did not complain of the treatment received from some of the "hard-boiled" regular officers of the Medical Corps, and of a few Reserve medical officers inflated by rank; it happened that I was thrown with some of the latter as well as the former. The so-called inspectors, I found sometimes to be a nuisance, actually some of them were sent from London to inspect our enlisted men and patients for cooties, at the hospital there being on duty twenty-five or thirty medical officers, any one of them certainly being as competent as the inspector. Many of these officers were medical ignoramuses, absolutely devoid of scientific attainment. Familiar with the paper work and red tape of the army, it seemed a joy to them to humiliate the volunteer doctor who was absolutely ignorant of army methods. Necessarily there was friction, and there always will be friction unless some steps are taken to rectify the conditions which this war taught us exist.

The army must offer more, both from the scientific and financial standpoint to the young doctor, if the standard is to be higher than at present. The method of handling patients must be freed of the voluminous paper work so that in time of war the medical reserve corps men can easily take over the management of any phase of army medical work. So far as possible, administrative work should be taken from the medical corps. The welfare of the patient should always be the physicians chief care. This can never be attained where papers count more than patients, and yet there are probably only a few of us who served who have not seen the regular army surgeon take the attitude "To hell with the patient, show me the papers."

May I emphasize the fact that personally I have few grievances, in fact I was discharged several months ago, and ever since, have tried to forget unpleasant happenings. Full well do I know that there are many officers in the Regular Medical Corps who deserve praise, who are cultivated, scientific and efficient, and to them we owe a debt of gratitude, and I honor and wish them well.

For General William C. Gorgas, the retired Surgeon General, I entertain the greatest admiration. As a student at Bellevue Medical College, I knew him well, and since have known of his work and worth. He and he only could have successfully mobilized the medical profession of this country, surrounding himself with the greatest medical men we have, and counselling with them, he established the remarkable Reserve Medical Corps

that existed in our Army, not only caring for our own wounded soldiers, but rendering valuable aid to our allies.

We all have reason to feel proud of the American doughboy, who kept his courage in the hospital no less than in the field, and would smile with his eyes when no other part of his face was left to smile with. This is indeed worthy of thought when we realize that ours was, for the most part, a conscripted army, further from home and loved ones than any other large force ever was. Certainly those of us so fortunate as to have ministered to him will always remember the doughboy with admiration and love. '

ORATION IN SURGERY

TREATMENT OF COMPLICATED FRACTURES.*

By William Barnett Owen, Louisville.

Solutions of osseous continuity, regardless of the anatomic situation involved, may be divided into two large classes, viz., (a) simple, and (b) complicated. The latter may be further subdivided according to the extent and character of the injury into the following types: (1) compound, (2) comminuted, (3) intra-articular with or without accompanying luxation, (4) oblique and spiral fractures. The majority of fractures are produced by violence externally applied.

Before discussing details as to the management of complicated fractures, and to avoid unnecessary repetition, a general outline of the treatment of fractures seems advisable. It must be remembered that in no department of surgical practice is greater patience and technical skill required than in surgery of the bones and joints. To be successful the surgeon must possess both accurate anatomic knowledge and mechanical ingenuity, since fractures may differ in many essential respects although occurring in similar anatomic situations. This is a feature which has hitherto been insufficiently emphasized by those who have written on the subject.

In studying an individual fracture, whether simple or complicated, determination of the method of its production is important. It is noteworthy that the management of fractures seems impossible of even approximate standardization, and in a previous study of the subject the following reasons were advanced to explain this feature:

(1) The infinite variety of traumatic agencies causative of osseous and integumental damage.

(2) The multiplicity of anatomic situations and the varieties of injury which may be produced by external violence.

(3) The extreme variation in degree of the resulting bony injuries in different localities under circumstances seemingly identical.

(4) The diversity in extent of the injury inflicted upon the overlying integumental, nervous, and vascular structures.

(5) The physical status of the individual when first observed, and the time which may have elapsed since his injury.

(6) The presence of local or constitutional disease which might militate against normal union of the injured, fractured or lacerated tissues.

(7) Finally, the type of the individual fracture and the nature and method of its production must govern the indications for therapeutic procedure.

Obviously the treatment of fractures to be successful must be strictly individualized, and no general rules can therefore be formulated. Not many years ago it was the common practice to amputate extremities involved in compound and otherwise complicated fractures, but under our modern technical methods amputation is rarely considered excepting where irreparable damage has been inflicted upon the osseous, integumental, nervous or vascular tissues. Extensive infection does not necessarily prevent ultimate repair.

We have learned much concerning the management of fractures from those who recently returned from the war zone, and many of our ideas must be revised. Of course, it is recognized that not all of the methods employed in military surgery can be applied to civil practice; but in most cases the underlying principles are identical and only the technical details have to be modified.

In the treatment of fractures the personal equation of the surgeon, his previous experience, observation and individual preferences, must in a large measure govern his mechanical and operative manipulations. The objects sought to be attained are: (a) reduction with maintenance of fragments, (b) union without anatomic deformity or functional impairment. Unfortunately ideal results are not always possible of accomplishment by the most approved methods of treatment. Much depends upon accuracy in diagnosis, and all fractures whether simple or complicated should be examined by the roentgen ray before reduction to determine the exact nature and extent of the injury, and afterward to demonstrate whether satisfactory approximation has been secured and maintained. It is important that at least two plates be made from different

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angles both before and after reduction, otherwise errors are not impossible.

Reduction should be accomplished where feasible by external manipulation and maintained by suitable splint or plaster cast of proper length. In compound fractures reduction by the open method of procedure is necessary, the wound being enlarged sufficiently to permit the required manipulations.

In either simple or complicated fractures of the long bones, where maintenance of reduction is impracticable without extraneous aid, open operation with application of kangaroo tendon or silver wire to hold the fragments in correct apposition will usually meet all the indications. If preferred the "gimlet" method devised by Dr. H. H. Grant, of Louisville, may be used. Where any mechanical fixation apparatus is necessary the gimlet method or some of its modifications should be given preference over the Lane plate, nails, screws, etc., the majority of which have to be removed by subsequent operation. The autogenous bone graft or inlay will be found most satisfactory in properly selected cases. At the risk of being accused of frequent repetition, I wish to emphasize that open operation should never be performed where accurate approximation of the fragments can be secured and maintained by the closed method.

The after treatment of fractures is important: Prolonged joint fixation should be avoided, and early application of heat, gentle massage, and mild passive motion—just short of the production of pain—will be found beneficial in all instances. Early vigorous active movement should be practiced with extreme caution, otherwise harm rather than benefit may be produced. A properly reduced and dressed fracture should be practically painless after the first few days, and persistence of pain indicates improper reduction or nerve injury.

A few words may be permitted concerning non-union of fractured bones. It is a trite surgical axiom that anything which interferes with: (a) the formation of provisional callus, (b) invasion of osteoblasts, (c) calcareous deposits around the osteoplasts, (d) absorption of functionless osseous formation, may be the direct cause of non-union. There are many contributing causative factors, among the most important being: (a) defective reduction with widely separated fragments, (b) inordinate freedom of motion, (c) interposition of periosteum, muscle or fascia between the fractured ends, (d) interference with blood or nerve supply from injury or too tight bandaging, (e) infections or debilitating diseases which devitalize the tissues. In some instances the fragments unite by fibrous bands, or become surrounded by ligaments, thus producing the so-called fibrous union and false joint.

The treatment of non-united fractures depends entirely upon the cause, but in the majority of instances the most favorable results may be secured by open operation. Rarely the stimulation afforded by motion and exercise will induce callus formation and consequent union. However, to temporize with frictions, stimulating applications, and other methods usually recommended in text books and elsewhere is merely to court disaster. It is interesting to note that in delayed union and non-united fractures, where there is no interposition of soft tissues, there is a constantly growing tendency on the part of surgeons to postpone operative intervention longer than we previously thought advisable and favorable ultimate results have been secured in many instances without resort to operation. The internal administration of thyroid and other glandular extracts, the calcium salts, etc., have seemed to be beneficial in promoting union in certain cases.

(1) Compound fractures: In all compound fractures the integumental and most likely the osseous structures are already infected when the patient first comes under observation of the surgeon, therefore open treatment and drainage are necessary to insure favorable results. The protruding fragments should be adequately cleansed before being reduced, and all foreign material must be removed from the soft tissues. Where comminution has also occurred the external wound should be enlarged and useless unattached bony fragments removed, care being observed to inflict the least possible operative trauma upon the periosteum. Attached fragments should be reduced and preserved where viability seems assured. Infection usually subsides within a few days under the Carrel-Dakin method of treatment (when the solution can be properly made and employed), when secondary closure may be effected. Of course the fracture area should be fixed with proper appliances; if plaster is used an opening must be provided for frequent dressing. Early massage and gentle passive motion will prevent ankylosis of neighboring joints. In all compound fractures it seems the height of surgical wisdom to practice prophylactic injections of anti-tetanic serum.

(2) Comminuted fractures: Nearly all comminuted fractures require open operation, on account of the impossibility of accurate reduction and maintenance of the fragments by the closed method, especially where extensive comminution has resulted from crushing injuries and gunshot wounds. The fragments should be placed in perfect alignment and maintained by the introduction of suitable

material, preferably kangaroo tendon. For the most part the treatment is then the same as that recommended for compound fractures.

(3) Intra-articular fractures: The most serious and difficult to treat of all fractures are those involving the intra-articular surfaces. The diagnosis can seldom be perfected on basis of the clinical findings alone, nor can perfect anatomic approximation of the fragments be secured by the closed method of treatment in the majority of instances. The joint should be freely opened to determine the character and extent of the osseous injury, to secure proper reduction and fixation of the fragments, and for drainage where required. In the absence of infection the wound may be safely closed by primary suture. In compound and comminuted intra-articular fractures drainage and secondary closure must be practiced. Of course closure should be delayed until after subsidence of the infection. "Even simple intra-articular lesions possess a certain sinister significance, because of the danger that permanent damage may have been inflicted upon the delicate joint structure which will entail future limitation of functional capacity. Where the fracture is complicated, i.e., compound, comminuted or accompanied by luxation, the dangers are correspondingly increased. Ashhurst says that apart from the questions of axial deviation, or rotary deformity, of shortening, and of lesions of the soft parts, there is the additional and all-important factor of impairment of joint motion; and unless accurate reduction is secured, there will be permanent disability in some degree, varying with the extent of persistent deformity. Let it be emphasized that in all compound, and the majority of comminuted intra-articular fractures where the fragments cannot be maintained in accurate anatomic apposition, the open method of treatment must be employed if restoration of function is to be expected. Immobilization is necessary in all intra-articular lesions until bony union is established and the soft parts have healed, when massage and gentle motion are indicated. Of course luxation if present must be reduced and maintained.

(4) Oblique and spiral fractures: Certain types of complete oblique and spiral fractures of the long bones cannot be successfully treated excepting by the application of mechanical fixation devices or resort to the open method, and to that extent at least such lesions may be regarded as complicated. In most cases where no comminution has occurred, accurate anatomic apposition may be maintained by traction after perfect reduction has been secured, with prevention of shortening and other types of deformity. Where roentgenoscopic investigation shows faulty position of the fragments after reduction by the closed method and application of traction apparatus, the gimlet fixation device is advocated. In the event this cannot be applied because of the number of fragments, then the open operation should be undertaken at once, and after the fragments have been fixed in proper position by kangaroo tendon or silver wire a plaster cast is applied. The fracture is thereafter treated along lines similar to those already mentioned.

In order to make this paper of some practical value, I have selected a limited number of clinical cases which will be briefly reported with exhibition of lantern slides for your consideration.

Case 1. Mrs. T., aged forty years, sustained a fracture of the left radius three years ago. Open operation was performed by an excellent surgeon who inserted a Lane plate. Osteogenesis was evidently faulty because of the presence of the foreign material, and rarefying osteitis developed around the screw holes. Union did not occur and the deformity greatly increased. About one year later the Lane plate was removed and an autogenous bone graft from the tibia was used as an inlay at site of the original Lane plate application. Union was firm in ten weeks, the deformity was entirely corrected, and function re-established.

Case 2. Dr. H., aged thirty, fracture of the femur three years ago. A Lane plate was applied to maintain position of the fragments with the result about the same as in case one. There was no callus formation on the outer aspect of the bone and very little on the inner aspect. A rarefying osteitis developed around the screw holes, and localized atrophy of the bone was marked. There was practically no union after three months. A similar operation was performed as in case one, using an autogenous bone inlay. In eight weeks union was fairly firm. On account of the prolonged fixation with atrophy of the muscles and bone, coupled with a desire to secure early function and to further stimulate bone formation, a long double upright brace was applied extending from the pelvis to the heel which was worn for six months. In addition we practiced daily massage in a hot bath with active motion of the knee and ankle. The final outcome was perfect.

Case 3. C. L., aged eighteen, oblique fracture of the femur and also a fracture of the tibia about four inches below the knee. Under general anesthesia an attempt was made to reduce the fracture of the femur by the closed method, a plaster spica being applied for retention. Roentgenoscopic examination the following day showed good position. The pa-

tient experienced no pain, nor was there any other evidence of trouble. Four weeks later another X-ray picture was taken and much to our surprise the fracture of the femur was found in the same position as when the patient was admitted to the hospital, the bones over-riding about one and a half inches. The fracture of the tibia had remained in good position. The following day open operation on the femur disclosed a section of muscle between the fragments and sufficient callus to close the haversian canals. These were reopened and the fragments placed in apposition and maintained by the application of gimlets as recommended by Dr. Grant. This fixation device was removed in six weeks when union was fairly firm, and the external dressings were discarded. The treatment during the next two weeks consisted of heat and massage, active motion being gradually instituted at the end of that period. A long brace was applied as in case two which was worn for four months. The final outcome was perfect.

Case 4. L. L., aged seven, spiral fracture of the left femur, the bone being splintered "like a sapling struck by lightning;" also fracture of right tibia and fibula about an inch and a half above the ankle joint. Attempted reduction by the closed method under general anesthesia proved unsatisfactory. Open operation was then performed on the femur, and after reduction two silver wires were used placed about three inches apart, one being inserted through holes drilled in the fragments, the other encircling the bone to hold the splinters together. A plaster spica was then applied. The ankle, which had become impacted and firmly held in a deformed attitude, was opened and the fragments prized apart with a bone elevator. After reduction a plaster cast was applied with the foot at right angles to the leg in slight varus position. Recovery was uneventful.

Case 5. Mr. S., aged nineteen, fracture of the right radius and ulna. Attempted reduction by the closed method under general anesthesia was unsatisfactory. Open operation was performed two weeks later, silver wire being used on the radius; the ulna was forced into position, and showing no attempt to become displaced, was not sutured. Palmar and dorsal splints of plaster were then applied, and the arm inspected at frequent intervals. Union with re-establishment of hand and wrist function in six weeks. This man has since served one year in the U. S. Navy without inconvenience.

Case 6. J. R., aged ten, had an impacted fracture of the ulna about two inches from the elbow joint with dislocation of the head of the radius. Under general anesthesia the closed method of treatment was successful; the head of the radius was replaced, the impaction of the ulna reduced, the arm being dressed in the Jones position. The first dressing was removed in two weeks, the arm inspected weekly threafter, heat and massage used followed by active exercise. The anatomic and functional results were perfect.

Case 7. O. B., aged twenty-one, two years ago sustained a fracture of upper end of the tibia which loosened the external semilunar cartilage, with the exception of a slight internal attachment, which was freely movable in the knee joint. July 8th, 1919, the knee joint was opened and a piece of bone with cartilage attached 4 cm. x 2 cm. x 1 cm., removed. Microscopical examination made by Dr. Stuart Graves was as follows: "Eleven sections show hard, cancellous bone; otherwise negative." This man is a railroad clerk whose duties require him to stand all day at a desk. Last examination September 13th, 1919, showed result excellent, no pain, and function good.

ORATION IN MEDICINE

EARLY DIAGNOSIS IN PULMONARY TUBERCULOSIS.*

By John W. Scott, Lexington.

By way of introduction I wish to discuss briefly the pathology of the disease and to make plain my conception of certain other fundamental considerations which strictly speaking are not part of my subject but which seem to me to bear an important relationship to it.

In the first place, let us see, what happens when the tubercle bacillus enters the body? It is primarily and always a foreign body and therefore an irritant. Let us suppose that in a particle of dust or in a droplet of moistnre from cough, bacilli find themselves upon the mucous membrane of the nose or mouth, are carried to the tonsil and there pass into the lymphoid tissue. Being foreign bodies, connective tissue cells develop about them; into this mass some leucocytes find their way and there is formed the tubercle, at first microscopic, then macroscopic as the accretion of cells continues and it coalesces with neighboring groups. This, then, is the tubercle, a mass of connective tissue cells containing at its centre live tubercle bacilli and presenting at its periphery new cells, infiltrated with leucocytes and with open channels of communication into surrounding tissue. It is at first a minute waxy nodule and is the characteristic lesion of

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the disease. The picture of the tuberculous lung with its miliary, pneumonic and fibroid changes, resulting, for example, in cavity, caseating nodes, adherent pleura has distracted our attention from this essential lesion of the disease. It is here that the battle is won or lost. Upon the behaviour of this tubercle depends the fate of the host. The closing of the channel of communication in its periphery, its fibrosis in short, determines so long as it is effective the end of the career of the tubercle bacilli there imprisoned, the tubercle is healed.

Primarily the tubercle differs morphologically in no respect from that with which any irritant particle, say a speck of coal dust, is surrounded by offended tissue. But soon the characteristics of growth of the tubercle bacillus begin to play their part, and extension and dissemination occur dependent on location and tissue conditions surrounding the tubercle.

For example, the peripheral zone may fail to close by fibrosis its channels of communication, bacilli are carried into surrounding tissue there to start new tubercles subject to the same fortunes as were the first, but ever less disposed to fibrosis as new tissue is invaded; or these channels may close and fibrosis result. Or perhaps lime salts are deposited in it and it becomes calcified, a safe sepulchre for its contained bacilli.

Consider how chance of location of the tubercle and of other events in the body determines the result. For instance, bacilli enter the lung, tubercle develops, fibrosis is progressing and all would be well but our patient develops whooping cough, congestion in the periphery of the tubercle is increased, the imprisoned germs break their bonds and the process extends and goes on to frank disease.

Or a caseous tubercle lying near a lymph channel suddenly ruptures a gradually thinning wall and its content of bacilli is poured suddenly into the lymph stream, thence into the vena cava and scattered by the blood broadcast throughout the body and acute miliary tuberculosis results.

Or strategy, as in a case now under observation, a tubercle goes on and infiltrates the greater part of both lungs and gives no warning, there is no illness, the individual is drafted into the army, without mishap undergoes severe training and is discharged. Some months later he begins to lose control of his legs, and notices a lump in his back. After two or three weeks he seeks advice and examination reveals extensive disease of both lungs, and a large kyphos, the body of one vertebra quite destroyed. All in only a few weeks of symptoms. At some time bacilli carried in the blood stream had blocked a small vessel in the vertebra and rapid disease had followed.

It is clear that it is the whooping cough that determines the extension, not lack of resistance in the tissue invaded; that it is the chance location of the caseous nodule near the lymph channel or freed by the nephrectomy that determined the miliary tuberculosis, not affinity for the bacillus; that it was the mass of bacilli plugging the vessel in the vertebra and not weakness of the bone which determined the Potts disease. In short, that it is conditions of location of the tubercle itself and of influences from without affecting it which decide whether or not it remains a harmless nodule or group of nodules, or on the other hand progresses either slowly, rapidly or with dramatic speed.

Indeed there is no event in the course of the disease which cannot be described in terms of definite pathology, without resort to mystifying or meaningless terms such as predisposition and lack of resistance.

To quote Krause's striking illustration, the vegetation detached from a diseased endocardium, may be carried into a muscle, thrombose a small vessel and remain innocuous, or by chance, it may instead be carried into a coronary artery and cause immediate death; it is the circumstance of time and place that determine the issue. No one would say that the patient had a predisposition to coronary thrombosis, that he had thrombotic diathesis. So let us clarify our mental processes and think in terms of pathology that we can sense, that is demonstrable in the laboratory and the dead house, and keep our thoughts free from terms which after all mean no more than the maisms and diatheses long since abandoned.

Let us then proceed to the subject in hand, keeping always in mind the tubercle, the conditions surrounding it, and the influence upon it of other events in the body.

When is diagnosis early in pulmonary tuberculosis? The idea prevails that early diagnosis means only diagnosis of the disease while incipient; that there is a stage in every case when its recognition and cure are in the hands and within the power of the physician; that the tuberculous lung is like the field which the farmer has allowed to go to weeds, prima facie, indeed, conclusive evidence of lack of care. That the lung, like the field, presents to the discerning eye, clear evidence of the beginnings of the destructive process and at a stage when it will respond as certainly to remedial measures.

We all know that this is not true; that the disease does not progress always or even usually, in an orderly manner, adding gradually one symptom to another. True enough it is that too often symptoms of disease in its in-

cipiency are disregarded and progression to advanced disease is allowed, which if recognized promptly could have been treated with every prospect of arrest, but there is not one of us who cannot recall in his own experience, instances of a sudden plunge from apparently perfect health into advanced and irremediable tuberculosis. Perhaps this has followed trauma to the chest, perhaps the violent exertion of an athletic contest, a game of football, a wrestling match, or without any unusual event preceding.

Such a one may be found with extensive infiltration or even consolidation or cavities which must have been long in development, or with a lower lobe solid with caseous pneumonia. It is true that these unfortunates had real pathology but, granted they did and that it would have been disclosed on physical examination, which in some of the cases at least is doubtful, they were not sick and did not feel the need of either examination or treatment and therefore diagnostic skill and clinical acumen could not be expected to avail anything for them.

The day has passed when the occurrence of advanced disease in the practice of a physician implies failure of duty on his part; I do not wish to lighten the responsibility or to lessen the blame which should attach when as too often happens, the case sprouts, stools, stems, heads, and ripens under the blind eyes of the physician. But to argue that his eyes are blind because the advanced case was not discovered while incipient is not borne out by the facts.

Our own propaganda is not without fault in fostering this idea, that early diagnosis should always mean the diagnosis of incipient disease. We are enjoined "to eradicate tuberculosis," "to rid the State of tuberculosis." Tuberculosis is classed as preventable, when it is the most unpreventable of all diseases.

It is urged upon the practitioner that the very existence of the disease should lie upon his heart and conscience and that were his duty done it would vanish from the community or the State as did yellow fever from Havana.

"Why not?" you ask, "are they not both diseases due to an infecting organism?" But consider the essential difference between tuberculosis and yellow fever. The individual infected with yellow fever in a short time, a few days, becomes ill, he dies or he recovers, if he recovers the infecting organism is destroyed and he is soon free from the disease. While first infection with the tubercule bacillus is not followed immediately by manifest disease. It may be years before symptoms appear. In only a small percentage of those having infection or tubercle, does disease ever occur. Infection, however, that is tubercle, is sure to follow; as sure, indeed, as is measles to follow exposure, according to Krause. What results? Obviously it is in the normal course of events for the individual to develop tubercle, and having developed it to become a potential factor in infecting others. We shall not exaggerate if we say that 60 per cent of the population have thus developed tubercle, but who shall say what will precipitate into activity the 6 per cent of these who are to have tuberculosis disease, or when this will occur?

Are we not prepared to maintain that the importation into a community of children with measles or whooping cough or influenza will be of more moment in this respect than would an equal number of cases of open tuberculosis? Is it not clear that tubercle is the common lot of man; that the commonplace acute diseases, the strains and accidents of every day work and play are the usual exciters of this quiet tubercle into tuberculosis disease?

If then infection is universal and unforseen circumstances may make of anyone an infecting agent, the control of infection under present conditions is beyond even the imagination. It has been stressed, too much in our propaganda for it has no important place in the control of the disease. And since infection has not the chief place, early diagnosis which has been considered the very key to the the problem is not of first importance. He who makes such early diagnosis performs an important remedial function, so does he who detects the early and remedial carcinoma but no one, I take it, would say that the incidence or the eradication of cancer from the race depends in any wise upon such diagnosis. Research aside, the problem is chiefly a social one; safeguarding the young with proper schools, with playgrounds, with food for the underfed, with child labor and housing laws, indeed all that goes to make a stronger and happier race, particularly in childhood, and education in the facts, not the fallacies of the disease, all of these are of vastly more importance than attempting the impossible task of preventing the entrance of the tubercle bacillus into our bodies. Since infection must be relegated to a less important place, early diagnosis which was to be the very touchstone of prevention cannot be the important factor we were led to believe. It is a clinical problem chiefly rather than one of prophylaxis.

What are we seeking to do in early diagnosis of pulmonary tuberculosis? Early diagnosis of what? Surely not of tubercle, that is of infection with the tubercle bacillus or of the lesions which it has produced, for we have seen that the lesion is by no means the meas-

ure of the disease. Diagnosis of the lesion, is an estimate, in a way, of the anatomical change that has taken place and is largely a matter of skill in physical diagnosis. Diagnosis, then, of what? Of tuberculosis disease assuredly; that is, an estimate of the relation between the symptoms from which the patient suffers and the tuberculous lesion, which latter may or may not be demonstrable. For without symptoms the patient is not sick and needs no treatment.

Just here is the rock upon which diagnosis is so often wrecked, other things have been stressed at the expense of the patient's story. In the minds of many the diagnosis of pulmonary tuberculosis begins and ends in the microscope and stethoscope; the definite information sometimes obtained from them has resulted in these being too much stressed and in forcing into the background, as Hamman points out, the patient's story and two equally important, though commonplace, instruments of precision, the clinical thermometer and the scales.

It is true that tubercle bacilli found in the sputum supply the only incontestible proof of the disease. Since, however, only the open tuberculous lesion, that is one in which there is caseation into the air passages gives a positive sputum, failure to find the organism in the sputum signifies nothing; indeed repeated negative examination or the entire absence of sputum are of little more significance. When we consider our tubercle we see plainly that there may be open channels of communication, free entrance into the lymph channels of the products of growth of the bacilli, escape of these into hitherto uninvaded tissue and extension of the process without any caseation or breaking down of tubercle which is necessarily antecedent to the entrance of the bacilli into the air passages.

It seems trite to repeat this; yet how often do we meet cases that are allowed to drift into advanced disease while futile efforts are being made to find the organism in the sputum! It cannot be too strongly emphasized that a positive sputum does not occur until there is breaking down of tissue and that there is a considerable period during which the tuberculous process is going on before this breaking down or ulceration occurs. While therefore sputum examination should be assidiously practiced, it can be only an occasional aid in diagnosis.

The physical examination of the chest in the hundred years since Laennec has become so highly developed that very slight changes in percussion note, breath sounds and vocal resonance are recognized and fairly accurate conclusions as to the state of the contents of the thorax are drawn from them. These signs are based on the acoustics of the chest which in turn depend as far as the lung is concerned upon changes which may be recent or old with little difference in the resulting signs; it is not unusual to find an old process which has undergone fibrosis and has been asleep for years which presents changes in note and breath sounds simulating active pulmonary disease. This does not apply to rales; the moist rale localized, particularly at the apex, is fairly pathognomonic of tuberculosis activity. These rales are not to be confused with adventitious sounds of various kinds heard particularly about the clavicle and at the base in the axillary region, but are distinctly moist rales, small or moderately coarse, heard during inspiration and frequently elicited only by cough after deep expiration; one who has not practiced this method will be surprised at the rales he hears which would escape detection otherwise even with deep breathing. As a negative sputum does not disprove tuberculous activity, so the absence of moisture as indicated by rales does not disprove it and again, like positive sputum, so the moist rale marks a progression of the disease before which it is desirable that at least a tentative diagnosis be made. For instance Heise reports in a series of peribronchial cases at Trudeau only 33 per cent showing rales.

While no physical signs, with the exception of moist rales, are conclusive of early activity there are changes in breath sounds, voice and percussion note which are very suggestive or corroborative but the detection of these is often a matter of some difficulty. Hamman describes physical examination of the chest "as the most difficult field of internal medicine" and says further "we have no right to ask of them (the majority of physicians) the special interest and arduous application that expertness in this department of diagnosis requires." And as a corollary of this we might add, that there should be expected of them a reluctance to assert absence of physical signs and to draw the unwarranted conclusion therefrom that tuberculous activity does not exist.

One not specially trained in the examination of the eye, or ear, or the pelvic organs, or the nervous system would refuse to give such an opinion, particularly a negative one in regard to these organs, and yet in this field in an examination of considerable difficulty in which the chance of error in the most experienced hands is very great, such an examination is made the basis of negative diagnosis in the face of contrary history and symptomatology of the most convincing sort.

Physical signs serve only to indicate the location and extent of the lesion and are not the criterion of activity of the process. This

is tersely expressed in three of Brown's Tuberculosis Theses.

"Symptoms indicate that a patient is sick while physical signs point only to the mischief that has been done."

"Symptoms are a better and more accurate guide to activity than are physical signs."

"Symptoms without physical signs demand treatment, physical signs without symptoms require often only careful watching."

While totally different and far removed from physical examination in its method of application, the X-ray is after all closely related in the sort of information it gives, both deal largely with densities, the physical examination with density affecting the transmission of sound, the X-ray with density affecting the transmission of a ray comparable to light; the limitations of one are largely the limitations of the other. Like physical examination the ray gives information as to the location and extent of the lesion, and like it cannot be relied upon for conclusive evidence of activity. Both are indispensable for a proper estimate of the case and it has been well said that "no initial examination in a case of pulmonary tuberculosis is complete or competent without the use of the X-ray." (Beggs.) Such has been the improvement in technique and the development of plate interpretation that according to Cole "the majority of careful observers admit that the tubercle pathology from its clinical incipiency can be visualized in carefully made stereoscopic plates." These varying densities in connection with their anatomical distribution indicate clearly the tissue involved and the nature of the pathological process.

The conglomerate tubercle in the lung parenchyma may be identified. It is indicated by mottling, now composed of soft flakes with ill defined outlines, evidence of congestion and early inflammatory change, and again of a more discrete definitely outlined character indicating subsidence of the acute inflammation and, to go back to our picture of the tubercle, closing of the channels of communication, with limitation of the process. We see also the string like shadows of fibrosis, a still later step in arrest, or the dense clear cut shadows of calcification. Or, on the other hand, in case the disease has extended and progressed, we see the flaky mottling becoming more dense and somewhat, but never completely, homogenous. We may see distortions of the diaphragm and mediastinum, the dense shadow of fluid or the diminished density of air in the pleural cavity. In addition to these and other manifestations in the parenchyma and pleura, densities characteristic of definite pathology are seen along the bronchial tree, in the lymph nodes, in the tissues at the hylus.

In short, the carefully taken and properly interpreted stethoscopic Roentgenogram gives accurate information regarding lung pathology which taken in connection with clinical symptoms is of great value. The plate, however, must be read in terms of definite lung pathology and one should not expect to find broad contrasts, but should be prepared to appreciate the significance of slight variations from the normal, and must be familiar with both the pathology and the clinical features of the disease.

The fluoroscope cannot be expected to furnish the definite detail of the plate but it fills a very useful place and has many advantages. It is immediately available following the chest examination and if findings on the latter are recorded and if one is honest with himself the screen, while it may not feed his vanity, will help wonderfully in checking up and will improve his physical diagnosis. (As the low power of the microscope, lacking though it does the detail of the high, for that very reason serves a useful purpose, so the fluoroscope for reaons somewhat similar has its own important place.) The thorax is seen with its content of functioning organs, whose abnormalities of movement are lost on the plate. These may be viewed in any desired direction; penetration and quantity of ray may be varied at will. One also has a comprehensive view of what Minor calls the geography of the chest.

Two points of technique sometimes overlooked are important, first a sufficient stay in the dark room, before the examination to assure eyes sensitive to the light and secondly accessible and deligate Coolidge control so that penetration can be varied during the examination. The bright image with high penetration shows very little; most information of value is obtained with a dark screen, with a ray just sufficient to penetrate.

The various immune reactions which have provided sure methods of diagnosis in many infections diseases would seem to offer a valuable or even a positively diagnostic resource in this disease but they have been in the main disappointing; the reason is not far to seek. Other infections upon attacking the individual, either overcome him and destroy his life or else are overcome by him and entirely eradicated so that no trace of infection remains other than some antibodies which confer more or less immunity upon him. Not so with tuberculosis as we have seen, infection with the organism is not followed by the disease but proceeds always without clinical symptoms so that a very large proportion, if not nearly all the adult population have been

thus infected while a comparatively small number have suffered from the disease. These immune reactions, namely the various tuberculin reactions and the complement fixation test are reliable indications of tuberculosis infection but the information sought is not whether tubercle is present, but whether the symptoms in question are those of tuberculosis disease. Of the tuberculin reactions the subcutaneous test beginning with small doses of O. T. and increasing by small steps until reaction occurs, is probably the most used. Unless employed with great care and with accurate knowledge of the patient's symptoms before its use and careful observation afterward, it may be misleading and productive of harm, but in cases that are afebrile and in which a fairly definite negative diagnosis has already been made the additional evidence which it brings, of absence of hyper-sensitiveness, adds strong confirmation.

The intradermic test which consists of injection into the skin of certain minute and increasing amounts of O. T. or some other antigen is a test of skin hyper-sensitiveness evidenced by erythema and induration after smaller or larger doses in proportion to the degree of sensitiveness present; some consider failure to react to the stronger dilutions reliable evidence of absence of tuberculosis; opinion, however, is divided on this point. The cutaneous test of Von Pirquet is easily done but gives little information of value, except in children. As to complement fixation, I think Heise expresses the opinion of most clinicians when he says that he has thus far been unable to correlate it definitely with symptoms of activity.

We have concluded then that physical examination and the X-ray, while they define the location and extent of the lesion are not in themselves safe guides as to activity of the process which alone constitutes the disease, tuberculosis; that the immune reactions speak for tubercle whether active or inactive, though the intensity of reaction has some relation to activity.

What then should be the chief reliance in diagnosis? Fortunately the one which is within easiest reach and which being the simplest and most available seems too simple to be of value. I mean the patient's story; his past history, the mode of onset of his disease, his symptoms. Still bearing in mind that our problem is to determine disease and not only the presence of a lesion, how shall we value the symptoms? Naturally we shall consider of first importance those arising from the toxaemia of the disease, the constitutional symptoms: persistent elevation of temperature, persistent rapid pulse, loss of weight, loss of strength as indicated either by languor or lack of endurance, dyspnoea on slight exertion, night sweats, chills all pointing definitely to a toxemia. The temperature should be persistently over 99, the pulse over 90 in order to be considered significant. The temperature should be taken in the mouth for five minutes, and two hourly in the afternoon for a week. Loss of weight means a loss of 10 per cent, or at least, 5 per cent in 3 or 4 months. Given these symptoms not attributable to some other definite and palpable cause the presumption of tuberculous activity is exceedingly strong, even though no lesion in the lung or elsewhere can be demonstrated; provided such a lesion can be demonstrated it is well night conclusive. And fortunately all of this evidence is available to every one, always, and everywhere. No special training is required to read the findings of the clinical thermometer and the scales, or the rate of the pulse: these homely instruments of precision are universally available. Familiarity with them seems to have bred, if not contempt, at least disregard and indifference.

Like the leper of old, enraged when the prophet told him to bathe in the waters of Jordan to be cured, so we are apt to desire "to do some great thing," neglecting valuable resources which are in our very hands. Let us not forget that the evidence obtained by these homely methods out-weighs that which can be had only in the laboratory and by the use of different and intricate methods of examination.

Further questioning brings out the local symptoms, cough, expectoration, haemoptysis, pain in the chest, dyspnoea, hoarseness. Going back to the patient's previous history, one investigates conditions surrounding his childhood, whether there was prolonged exposure to infection; inquires into the diseases of his childhood, then those of adult life, particularly typhoid, malaria, bone and joint diseases, indigestion, pneumonia, pleurisy, bronchitis and other such diseases which might serve either to develop activity or to indicate that there was activity at some previous time.

Just as is the case with reference to loss of weight, fever and rapid pulse, so here it is carelessness, not ignorance which leads to error. No one denies abstractly the significance of haemoptysis; of pleurisy with effusion, of frequent hoarseness, of loss of weight, of persistent though slight elevation of temperature; indeed, no one would deny that some of them, singly, would force a strong presumption of the disease and yet practically, how often are these symptoms not only regarded seriously, but a real effort made to allay the fears aroused by their occurrence? An haemoptysis is said to come from the

throat, even that old myth of vicarious menstruation still survives!

Pleurisy with effusion, fortunately or unfortunately, does not yet excite the patient's fears. Loss of weight, languor, weakness are laughed at. Someone has said that "jovial reassurance takes the place of a careful examination" indeed what seems to be a careful examination or is a careful examination may still be made and one yet fall into error unless the real significance of these symptoms is borne in mind.

The more apparently careful the examination, the more serious to the patient is the error, if such it proves. Frequently one is told by the patient that his physician examined him and said that his "lungs were perfect, the best lungs he had ever examined" and reassured thus he may go on to advanced disease.

A flat negative diagnosis should be very reluctantly made; observation of the case should be maintained, the symptoms treated. With symptoms strongly suggestive every resource of physical examination, X-ray and laboratory should be exhausted before a negative diagnosis is given. The patient's conception of the meaning of such an opinion is not usually that of the physician who gives it. He is apt to consider it a bill of health for all time, as far as his lungs are concerned, and not to seek similar advice unless his symptoms are much more urgent.

On the other hand, there should be equal reluctance to make a flat positive diagnosis unless the evidence is fairly conclusive. While attended by no such grave consequences as a mistaken negative opinion, yet it is no light thing to fasten a diagnosis of tuberculosis upon anyone. It places an undeniable stigma upon him, it is a serious interruption of his business and of his family affairs, it imposes a heavy burden of expense upon him; and if this is done uselessly a real injustice has been done him.

Hyperthyroidism has much in common with early pulmonary tuberculosis; loss of weight and strength, tachycardia, slight elevation of temperature, nervous instability, constitute a syndrome common to both diseases. Goetsch's test of sympathetic hyper-sensitiveness which seems to be a measure of hyperthyroidism is very useful in these cases. This consists in the subcutaneous injection of 0.5 cc. of the 1-1000 standard epinephrin solution and a careful study of the pulse and respiration rate, blood pressure and other symptoms at frequent intervals, for the following two hours; when the test is positive an exaggerated picture of the syndrome of hyperthyroidism is seen. After using this in a series of cases at Trudeau, Nicholson and Goetsch concluded that this reaction does not occur in tuberculosis uncomplicated by hyperthyroidism.

Following the influenza of last year, there is a large number of non-tuberculous pulmonary infections which simulate pulmonary tuberculosis, these are not limited to post influenzial cases, the ill-defined "grippes" and other infections have been frequent causes of these conditions. The symptoms while usually less severe, may continue for sometime and suggest tuberculosis; the most significant thing in these cases is that the signs are basal and, as we have seen, the physical signs of pulmonary tuberculosis are never confined to the base, tubercle bacilli are not found in the sputum but large numbers of other organisms, chiefly cocci, occur. It is important to recognize these cases because they do well under ordinary hygienic measures, and the strict regime of tuberculosis therapy is neither necessary nor desirable.

The focal infections may also cause confusion. Bad tonsils, dead teeth, diseased appendices and prostates, all of the probable sites of such infectious processes must be investigated.

Erroneous positive diagnosis are not all of supposedly incipient cases. Bronchiectasis is sometimes mistaken for advanced tuberculosis but the former presents (1) signs limited to the bases, (2) a purulent sputum negative for tubercle bacilli, (3) frequently signs of extensive disease in patients singularly free from constitutional symptoms, (4) a stereogram showing in one or both bases the characteristic picture of bronchial sacculation.

Many so-called consumptives are the victims of empyema which has ruptured into a bronchus, the so-called pleural vomica, with profuse purulent expectoration. A soldier had a diagnosis of pulmonary tuberculosis, all lobes of both lungs, dated February, 1918, a year later he presented pitiful emaciation, severe paroxysmal cough, profuse purulent expectoration, and the complete picture of chronic sepsis. A repeated negative sputum first raised the question of correctness of the diagnosis, empyema was demonstrated by aspiration, and drainage by resection of a rib was done thirteen months after he had been set aside, so to speak, as hopelessly tuberculous.

A similar case, a four year old child, occured recently in the experience of one of my colleagues, a surgeon, who drained an empyema after the child had been sick for eighteen months with what was supposed to be tuberculosis of the lungs.

Such errors are specially disastrous for the reason that, once a patient is thus classified the question is not apt to be reopened, the

decision is final and miserable progress to a fatal termination ensues. In this connection two points may well be remembered, and they are almost axiomatic, first, a frankly purulent sputum if tuberculous will at some time show tubercle bacilli; second, that signs limited to the lower parts of the lung do not indicate tuberculosis.

One idea I have sought to convey through these somewhat desultory observations and that is that the early diagnosis of pulmonary tuberculosis is most often a probable one, that the evidence necessary for a positive and unequivocal opinion is not to be found in the earliest stages of the disease though at this time physical signs as well as symptoms may lead strongly in that direction.

IN CONCLUSION.

1. Infection or tubercle is well nigh universal and early diagnosis can have little bearing on infection, in the large.

2. One should hesitate to assert absence of tuberculous disease of the lungs by reason of negative physical findings.

3. Stereoscopic Roentgenograms visualize the pathology of the lung and are fairly indicative of the activity of the process.

4. The immune reactions are of uncertain value in demonstrating tuberculosis as opposed to tubercle.

5. The history and symptoms, constitutional and local, present strong evidence of pulmonary tuberculosis and to those not specially adept in physical examination are the safest guide to at least a working diagnosis.

6. In a large proportion of cases a probable diagnosis should be made, avoiding an unequivocal positive or negative opinion, safeguarding the patient, and imposing a more or less strict regime as the symptoms indicate.

Serotherapy of Typhoid Fever.—Rodet and Bonnamour report 127 cases of typhoid given injections of antiserum before the twelfth day. The total mortality was 11 per cent, but there was associated diphtheria or other disease in a number of the fourteen fatal cases. Eliminating these and the cases not seen till the twelfth day bring the death rate down to 2.9 per cent. Even in the fatal cases great benefit was apparent.

Teething—Sumer reiterates that the teething period in infants is not pathologic but is a period of stress and adjustment, like puberty and the menopause. Inherited taints may first make themselves manifest at such periods, and various pathologic conditions otherwise may prove refractory to all treatment until the stress of this critical epoch is somewhat mitigated.

OFFICIAL ANNOUNCEMENTS

MINUTES OF THE SIXTY-NINTH ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL ASSOCIATION, HELD AT ASHLAND, SEPTEMBER 23, 24 AND 25, 1919.

TUESDAY, SEPTEMBER 23—FIRST DAY—MORNING SESSION.

The Association met in the Auditorium of the Elks Club, and was called to order at 9:30 A. M. by the President, J. S. Lock, of Louisville.

Rev. W. C. Condit, of Ashland, offered the following invocation:

PRAYER BY MR. CONDIT

Almighty God, our Heavenly Father, we thank Thee that it is our privilege to call upon Thee, to ask Thy presence and Thy blessing when we are gathered together in the great interests of humanity. We pray Thy blessing may rest upon this gathering of men who look after the physical condition of our bodies and minister to our needs; and we pray Thy blessing may be with them in all their deliberations and counsel. Make them wise and may their coming together be for the health of each and every one, and may it be for the good of humanity. Bless them and give them needed wisdom.

We thank Thee, Oh gracious Father, that Thy son on earth did pity the suffering and give them relief, and it is our privilege to enter into that precious work, and may His blessings be upon those that give themselves to the relief of the body and to the strengthening and condition of our bodies for the good of our souls. Bless us at this time.

We thank Thee that there has been such a development in these lines through Thy gospel on earth, and that the nations that have accepted Thy gospel are the nations in advance in life and growth and well being. And we pray Thee, Heavenly Father, that Thy blessings may continue, and that Thou will give us enlightenment in the treatment of diseases that they may be banished from our sight.

We thank Thee that so much has been done to stop the frightful ravages of certain diseases, and wilt Thou give us an insight into more of them that the nation and the communities may be free from these pestilences that once devastated whole regions. May Thy blessings rest upon this gathering at this time. May Thy mercy and grace provide for each and every good, and may it be good for us to be brought together, and make us all helpful to one another, and to Thy name shall be the glory, forever and ever. Amen.

THE PRESIDENT: An address of wel-

come on behalf of the City of Ashland will be delivered by Hon. H. R. Dysard, Mayor of Ashland.

ADDRESS OF WELCOME BY MR. DYSARD.

Mr. President and Members of the Kentucky Medical Association:

My neighbors and friends have placed upon me the very pleasant duty of welcoming the medical profession of Kentucky to the City of Ashland. I want to assure you it is an especial privilege to me. I am glad for many reasons that we are at this time honored by this splendid profession. I am glad that those of you who live in the other parts of Kentucky will have an opportunity to see and know the kind and character of men who occupy and dwell in the eastern portion of the State. I am glad also that those who live in the eastern portion of the State will have an opportunity to see and know those of you who dwell in the western part of the State. The better we become acquainted, the less it will be necessary on these occasions to have a formal address of welcome. When we learn about the same people with the same hopes and aspirations and like patriotism for the welfare of our State, these formal speeches of welcome will possibly mean less than they have meant in the past.

You know, I have always had a great admiration for the medical profession. I know you have men in it who are ignorant; men in it, like all organizations that are composed of men, who are not ornaments to the profession. All down through the centuries, as man has wandered across the plains of life, we have had those outstanding characters whose souls were for the alleviation of human pain and suffering, and in all the sciences that we have learned anything about, we have none of them that can to-day boast of the triumphs of the medical profession.

I was reading just the other day an article that one of my doctor friends gave to me of the great obstacles you have had. I was surprised to know, because I did not know until then that the time was when the church said that a man made in the image of God could not be dissected, even though it was for the advancement of knowledge. In that time they threatened to punish the doctors with death if they undertook to dissect the human body. It was a revelation to me of the wonderful struggle you have made against prejudice, against ignorance, and against fanaticism. You are entitled to great credit for emerging from the beaten path. You have endeavored to see if you could discover something of the omniscent mind and the wonders of the human body.

I hope you will enjoy your stay in this city. Some of you, like other organizations that have been here before, may not realize that you are in a city at the foot of the hills or mountains, and among that class of people ordinarily termed mountaineers. I assure you, we have a progressive and up-to-date, live city, with all the opportunities that you have in some of the larger cities of the State. I hope that our citizens will make your welcome so pleasant that, like the other organizations that have come and gone, you will go away with a broader vision, a keener appreciation of this little city we have here.

It is a fine thing to see an organization of men coming together that from the combined experience of all they may gather something that they can take back to their profession and make useful in their daily work. It is a fine thing, of course, to get away for a day or two from the daily grind, and I hope that in your efforts to better yourselves, to broaden your vision, to get a view of the experiences of other men, that when the time comes to go away you will not feel that your visit has not been of real worth. I feel that the hearts of our citizens and our doors will be opened to you, and that all of the best citizens of Ashland will join with our brethren here of the medical profession in making you feel at home. I want you to come and go on the streets of the city just as you would your own conscious of the fact that your visit is appreciated. We want you to have a good time, and we hope you will come again. Gentlemen, walk into our homes and into our hearts. (Loud applause.)

THE PRESIDENT: An address of welcome will now be delivered in behalf of Boyd County Medical Society by J. W. Kincaid.

ADDRESS OF WELCOME IN BEHALF OF THE BOYD COUNTY MEDICAL SOCIETY.

J. W. KINCAID: Mr. President and Fellows of the Kentucky State Medical Association. This is one of the proudest moments of my life to be able to stand before you in your presence and welcome you to Boyd County and to the City of Ashland.

For many years it has been the wish, not alone of myself but of the entire profession in northeastern Kentucky, that we might have the privilege as well as the pleasure of entertaining this association at one of its annual meetings. I have not been actuated by selfish motives alone, neither has the profession of Boyd County been actuated by selfish motives in inviting you here. We did not do it with any idea of self-aggrandizement, but with the idea uppermost in our minds—especially did I have that feeling as being councilor for so many years in this district—that your visit here will tend to stimulate the interest in the profession that has been somewhat lagging, especially evidenced by attendance upon

the annual sessions of this association. One only needs to attend one meeting of the Kentucky State Medical Association to have implanted in him the desire never to miss a meeting. It will give to him a stimulation that will make him want to do better things for suffering humanity. It will make him want to improve himself, in order that he may be able to minister more successfully to those who have need for his services.

I am very sorry that you are meeting the kind of weather that we have been having this week, but we do not want you to feel that the sort of weather we are having is an index of the warmth of welcome with which we greet you.

As our worthy mayor has stated, the hearts of the people of Ashland go out to you, and their homes are open to you, and the officials of the city have given you, as it were, the gates of the city. It is yours to enjoy. It is yours to mingle with us and have the best time that you can.

A little more than thirty years ago I called a meeting of the physicians of Boyd County for the purpose of organizing a county medical society. I happened to run across the minutes of that meeting not very long ago, and in reading them over I found all the members who were present at that time have paid nature's debt and have gone to their reward. Among them were Drs. Martin, Young, Kiernan, and Wade, of Ashland. The Ashland physicians who are here present remember with affection all of those men whom I have mentioned and their memory will live in the hearts of the older citizens of Ashland, I am sure, as long as they live. They toiled here unceasingly for the betterment of the population and the citizens, giving to them their best efforts, wearing themselves out, as it were, in their service. From that time, down to the present I have been untiring and unceasing in my efforts to stimulate interest in organized medicine. I have personally reaped many benefits from it, and I have tried to point out to those with whom I came in contact what they were missing by not having the privilege of coming within the fold.

It would be as futile for me to attempt to portray the lily or paint the rose as to equal the imagery of words of our distinguished mayor of the city, who in his matchless eloquence has welcomed you. I only desire to say that we will do everything we can to make your stay pleasant, and we hope that you will carry away with you a recollection of this meeting that will always live as a green spot in your memory. (Applause.)

The entertainment that has been arranged by the Committee of Arrangements will be very pleasant if we have the right kind of weather for it. At any rate, you are here, and we are glad that you are here, and we welcome you with all the warmth that it is possible for us to bring. I thank you. (Applause.)

THE PRESIDENT: Dr. Horace Rivers, of Paducah, will respond to the addresses of welcome on behalf of the Association.

HORACE RIVERS: Mr. Mayor, Dr. Kincaid and Physicians of Boyd County: I want to say to you that this Association has been trying to come here for four or five years, and I believe I voice the sentiment of all those present when I say we are glad we have arrived. We believe and we know that we have received a warm welcome to the City of Ashland.

I personally took a walk over the city this morning, a very small portion of it, and you have a clean and very attractive little place. I am sorry we did not come here four or five years ago, because I know we would have enjoyed every minute of it.

To make a response to such an eloquent address of welcome as the mayor has delivered here this morning, reminds me of an old friend of mine in Arkansas. I used to go down there and meet a venerable old man, and he was the prince of men. Everybody who got into trouble in that country sent for Uncle Marve. They named the little town after him, known as Marvel, Arkansas. Uncle Marve was not a religious man, but they had a prayer meeting and got Uncle Marve interested so that he went over one day and they prayed for him. He stood that all right, and so a day or so afterward he went over again and they asked him to lead in prayer. He got up and he felt as I do at the present time and said, "Call on Mr. Clemons, he is hell on prayer." (Laughter.) I think Dr. Arthur McCormack ought to respond to these addresses of welcome. (Applause.)

Seriously, gentlemen, I hope that you will appreciate our stay in this city half as much as we appreciate being with you. (Applause.)

The retiring president, J. S. Lock, delivered the following address:

RETIRING PRESIDENT'S ADDRESS.

We have now come to the close of another year of this Association's work. At the time of our last meeting our country was in the midst of the world's war and our profession was doing its part toward bringing that war to a victorious end. I can this day look backward and see that Association meeting of a year ago; the tenseness of the time evidenced itself on the face of every doctor. Many of our co-workers were overseas and at cantonments—others were at this meeting offering their services and the ones of us who were to

remain and "Keep the Home Fires Burning" felt the grave responsibility.

To-day with all our heart, we welcome our doctors who are returning to us and their practices richer in experience and understanding of the profession; overseas men fought in the "front lines" while we at home fought the greatest scourge the world has ever known. Those who have returned, have found the physicians at home as magnanimous as the ones who went overseas—in that there was no thought of personal advancement or gain in the absence of the men who made such great sacrifices to join the colors. The one motive paramount was to serve the patrons of the doctor who had answered our country's call, as he would have done it, and welcome his return to his practice with a satisfaction of a duty well performed.

The past year has been an epoch-making time for all of us. We must profit by the knowledge gained during these unprecedented times by making it a working basis for the future, as a short cut to further investigations, discoveries and inventions, all of which we must in time pass on to generations yet to come. I hope we have learned to utilize the past by eliminating the impractical and assimilating the vital. While the opportunities of the past have been great, the greatest opportunities for service are always just ahead. Just over the hill lies your pot of gold.

The great World's War is ended. The cannon no longer is firing along the "Western Front." Our brave boys are no longer being killed and maimed nor are they even in the front line trenches. They have finished their job and we, as one man, with our souls filled with love and gratitude for every single one of them, welcome their victorious return with out-stretched arms, press them to our bosoms and worship them for the heroes they are. So far so good.

This welcome, this gratitude has been extended by every country in the history of the world to the soldiers who composed its victorious armies. And there it ended. An attempt has been made to offer a money compensation to those disabled. To such as have lost limbs or eyes, this is probably the only thing that can be done. Since our Civil War, too great an element of our population has been pauperized by a pension system that has been as anomalous as it was futile for any real good. What will we do in Kentucky for those of our boys who are temporarily disabled by insidious diseases from which prompt effort will bring complete restoration! Shall we stand as idly by as we have in past years and admit that our social system is a failure when it comes to the rehabilitation of those which the world has heretofore considered discards of the War? Thousands of our boys are returning with tuberculosis and other similar diseases which, if not cared for properly and efficiently now, will mean that they are to be added to the inefficients who were rejected by the draft-boards during the war. In the hurry of demobilization, hundreds of these splendid young men were superficially examined, and in order to get home quickly to their loved ones compelled to conceal symptoms that each day unfolds since they have returned. We are the only profession who can know the facts and, knowing them, ours will be the responsibility unless we awaken the proper conscience to the necessity which we face. Every soldier suffering from disabling diseases must be cared for until cured. This care must not be simply custodian, as is too frequently the care of our criminals and insane, but must be the kind of care that restores them to the full measure of the effective citizenship, which is their birthright. Nor does our duty stop here. With the revelations of the draft examinations before us, practically none of our people yet realize that thousands upon thousands of boys and girls are being perimtted needlessly and thoughtlessly to grow into manhood or womanhood unnecessarily developing the same defects that shocked the country by the draft rejects.

Since 1911, I have devoted my entire time to public health work. It has been my opportunity to study in greatest detail the conditions in which our people live in many counties in almost every section of Kentucky. Just now it is my special privilege to assist you and the people to serve in the prevention and treatment of tuberculosis. But I ask you to realize with me how little it is possible for one man to do, unless he is acting merely as the agent which interests every one of you who must come in contact, first and last, with all of these cases. If I could only make each physician realize his responsibility and his opportunity, not only in the prevention of tuberculosis, but in the prevention of all diseases! Before we really begin to functionate in a warfare against a disease as unfair and unrelenting as any Hun, we must have an efficient, official, organized and well-conducted Health Department in every County in Kentucky. Clinics must be conducted along modern lines, where as careful an examination for tuberculosis may be given as was given in the Base Hospital. They must be supplied with nurses, who can go into the homes and teach the people how to care for these cases, so that new ones may not develop and that old ones may get well.

Mingled with my gratitude to you for your great goodness to me, by exalting me to be numbered amongst the sixty-five Kentucky

doctors who have presided over this organization, is my lively hope that you will continue to work for all these things as you never did before. This hope is strengthened by the character, the history and the nature of the great man you have selected as my successor. Big of heart and brain and he comes from a long line of distinguished public servants. Fearless, honest, square, the same to every man who knows him, it is with real pride that I hand this gavel to the President of the Kentucky State Board of Health, who has now by your unanimous choice become the President of the Kentucky State Medical Association, and relinquish to him the honors and duties of this office.

At the conclusion of his address, President Lock asked Dr. Stine to escort the President-Elect, Dr. South, to the platform.

John G. South, President, was enthusiastically received. He delivered his annual address (See Page 384 October JOURNAL).

At the conclusion of the President's Address, J. N. McCormack said: I feel that every member present and every citizen has been thrilled by this admirable address as I have, couching in words burning facts which ought to be known in every home in Kentucky. In order that this may be to some extent realized, I move you, sir, that this address be referred to the Council, with instructions to abstract it as rapidly as possible for the public press, and send it to every newspaper in Kentucky; and further, that a sufficient number of copies be sent to the various organizations which are affiliating and cooperating in our work, the State Bar Association, to members of the State Press Association, to members of the various ministerial associations, women's clubs, Red Cross organizations and their membership in the various counties that have cooperated with us at every step in the recent epidemic.

MILTON BOARD: I second the motion and would ask that we include in the motion that a copy of the address be sent to the nominees of the respective political parties in this State, representatives and State officers.

J. N. McCORMACK: That means it goes to the circuit judges and judges of appeals and prosecuting attorneys.

Motion put and carried unanimously.

THE PRESIDENT: The time has now arrived for the beginning of our scientific session. We are very fortunate in having a young and able surgeon who is to read a paper to us on "The Surgery of Thyrotoxicosis," by L. Wallace Frank, Louisville.

The paper was discussed by Drs. Solomon, Wathen, Board, Willmoth and Abell, after which the discussion was closed by the author of the paper.

L. L. Solomon, Louisville, read a paper on "Laboratory Versus Clinical Diagnosis," which was discussed by Drs. Anderson, Carpenter, Scott, Wathen, Lock, and A. T. McCormack after which the discussion was closed by the essayist.

W. B. McClure, Lexington, followed with a paper entitled "Acute Mastoiditis," which was discussed by Drs. Carpenter, Solomon, and in closing by the essayist.

Dr. Irvin Lindenberger, Louisville, read a paper on "The Epidemiology of Communicable Diseases," which was discussed by Drs. Brady, Anderson, Solomon, Aud, Simpson, Layne, McCormack, and in closing by the essayist.

On motion, the Association adjourned until 2 P. M.

FIRST DAY—AFTERNOON SESSION.

The association reconvened at 2:20 P. M., and was called to order by the President.

Horace Rivers, Paducah, read a paper entitled "(1) Ileocecal Intussusception—Six Weeks Baby; (2) From Ascaris Lumbricoides; (3) From Enterolith; (4) Due to Embolism from Superior Mesenteric Artery."

This paper was discussed by Drs. Carpenter, Layne, Spalding, Abell, and in closing by the essayist.

W. W. Anderson, Newport, read a paper on "The Tendency Toward State Medicine," which was discussed by Drs. Stuckey, A. T. McCormack, J. N. McCormack, and in closing by the essayist.

W. B. Owen, Louisville, delivered the oration in surgery. He selected for his subject, "Complicated Fractures."

ARTHUR T. McCORMACK: We have present with us Charlton Wallace of Kentucky and New York. I move that a committee be appointed to escort Dr. Wallace to the platform. He is the natural successor of two other Kentuckians, Dr. Sayre and Dr. Gibbons, two of the greatest men known in the profession of the United States, and it is a matter of great pride to every Kentuckian that Dr. Wallace is walking in their footsteps, and those who admire him think it is only a question of time when he will surpass even their wonderful monumental records. (Applause.)

Motion seconded and carried.

THE PRESIDENT: I will ask Dr. Vance to escort Dr. Wallace to the platform.

Dr. Wallace was very warmly received by the members of the association. He said: Gentlemen and Fellow Kentuckians: They call me a New Yorker; I still call myself a Kentuckian in every respect, and Kentucky may well be proud not only of her present

day medicine and surgery but of her past. (Applause.) Kentuckians have and are putting forth in medical and surgical science some of the greatest and best things in the world, and I am certainly very proud of being a Kentuckian on account of the great heritage of the medical and surgical sciences which I have obtained from my Kentucky predecessors.

It was a source of great delight for me to have heard Dr. Owen's paper.

I do not want to sit down without thanking you gentlemen for having invited me here to talk to you, and I hope to-morrow I will show you something of interest.

Dr. Owen deserves great credit for the work that he is doing in Louisville. I have been associated with him very intimately in New York when he was there studying and working as an intern, and I can guarantee to you that Dr. Owen's fundamental principles in orthopedic surgery are as good as they are anywhere, and I may say that he has shown a great deal of courage in having gone to Louisville and started in practically as a pioneer in orthopedic surgery which has been too long neglected in Kentucky.

It has been the dream of many that some one with sufficient funds would establish in Kentucky an orthopedic hospital where so many of the poor crippled children can be gathered together and not only treated properly but also receive the necessary treatment and attention and educate them whereby they may become good citizens of this State. The crippled must depend upon his brain and his hands to get his living and to prove his worth to the community. In this State, I am sorry to say, the crippled child is really not getting it, except so far as what Dr. Owen is doing in Louisville, and that is only a drop in the bucket.

I hope you gentlemen will take it at heart and try to establish somewhere in this State where the crippled children can go and be cared for, an institute or hospital. I thank you. (Applause.)

C. C. Howard, Glasgow, contributed a paper on "Surgery in Rural Districts," which was discussed by J. G. Carpenter.

In the absence of W. F. Boggess, Louisville, who was to have read a paper on "The Treatment of Influenza and Its Complications" Virgil E. Simpson, Louisville, was asked to open the discussion on this subject, which he did. The discussion was continued by Drs. Scott, Sights, and discussion closed by Dr. Simpson.

On motion, the Association adjourned until 8 P. M.

First Day—Evening Session.

The Association reconvened at 8 P. M. in the First Presbyterian Church, and was called to order by President South.

Arthur T. McCormack, in introducing Dr. Irvin Abell and Dr. David Barrow, said: It has been the custom of the Kentucky State Medical Association to bring before the public of the city in which we meet the most outstanding men in the medical profession of America, so that we might at the same time do them honor and return to our hosts in some measure a reward for their cordiality and hospitality. It is with peculiar pride that the Kentucky State Medical Association has selected for this signal honor two gentlemen who have distinguished themselves not only in the Commonwealth of Kentucky but who have recently returned from overseas after having commanded two base hospitals from Kentucky, and who had the opportunity to see the developments of the great war for the freedom of the world, and we have invited them to come here to-night because we knew you would be delighted to honor them and the doctors and nurses who went with them, and took care of our boys. They are going to speak to us of their observations overseas.

It is with great pleasure that I present to you two men in Kentucky that we all love, Colonel Abell and Colonel Barrow. I am introducing both at once because we love them and delight to honor them as they have honored us. (Applause.)

Colonel Irvin Abell then addressed the Association on "Observations Overseas."

Colonel David Barrow, Lexington, followed Colonel Abell with an address on the same subject.

These addresses were listened to with marked attention and elicited many outbursts of applause throughout their delivery.

At the conclusion of the addresses, J. N. McCormack made the following motion.

On account of the great historic value of these papers I move that they be referred to the Council with instructions to publish them in an early issue of the Journal, and that twelve copies of the issue containing them shall be filed in the State Library at Frankfort, and further, that twelve copies be filed with the State Historical Society of Kentucky.

Motion seconded by several members and unanimously carried.

On motion, the Association adjourned until Wednesday, 8:30 A. M.

Wednesday, September 24.—Second Day—Morning Session.

The Association met at 8:30 A. M. and was called to order by the Secretary in the temporary absence of the President.

John R. Wathen, Louisville, was elected

Chairman pro tem, in the temporary absence of President South.

W. E. Senour, Bellevue, read a paper entitled "Surgical Advance," which was discussed by Drs. McChord, Rivers, Gambill, and in closing by the essayist.

I. H. Brown, Winchester, read a paper entitled "X-ray in the Diagnosis of Tuberculosis."

Discussion by Drs. Dowden, Keith, Anderson, Scott, Pope, A. T. McCormack, and in closing by the essayist.

I. A. Arnold, Louisville, read a paper on "War Surgery of Bones and Joints as Applied to Civil Practice."

F. P. Strickler, Jr., Louisville, followed with a paper entitled "Fractures of Cervical Vertebrae; Diagnosis and Treatment."

Charlton Wallace, New York City, gave an illustrated talk on "The Functional Re-education of Traumatic Injuries."

W. B. McClure moved that the visiting physicians from Portsmouth, Ohio, be accorded the privileges of the floor and made guests of the Association.

Seconded and carried.

The papers of Drs. Arnold, Strickler and Wallace were then discussed by Drs. Owen, Abell, Pope, and discussion closed by the essayists.

C. A. Vance, Lexington, read a paper entitled, "Diagnosis of Tubercular Peritonitis," which was discussed by Drs. Cowan, Layne Gambill, after which the discussion was closed by the essayist.

E. J. Brown, Stanford, read a paper on "The Extremes of Age as Surgical Risks."

The discussion on this paper was postponed until the afternoon session.

John W. Scott, Lexington, delivered the oration in medicine, selecting for his subject "Early Diagnosis of Pulmonary Tuberculosis."

On motion, the Association adjourned until 2 P. M.

SECOND DAY—AFTERNOON SESSION.

The Association reconvened at 2 P. M. and was called to order by the President.

The paper of Dr. Brown was discussed by Drs. Carpenter, Cowan, David Barrow, McChord, A. T. McCormack, Gambill, and discussion closed by the essayist.

C. W. Dowden, Louisville, read a paper entitled "Diagnosis of Valvular Diseases of the Heart," which was discussed by Drs. Scott, Toll, Simpson, Anderson, and in closing by the author of the paper.

J. D. Ruggles, Portsmouth, Ohio, read a paper entitled, "Maxillo-Facial Surgery," which was illustrated by slides.

C. B. Cornell, Lexington, read a paper entitled "Psychology and Citizenship."

At this juncture Dr. David Barrow, Lexington, took the chair.

The paper of Dr. Cornell was discussed by Dr. Pope.

J. D. Heitger, Louisville, read a paper entitled "Diagnostic Significance of Vertigo to the General Practitioner."

P. C. Layne, Ashland, followed with a paper entitled "Focal Infection in Relation to Bones and Joints."

On motion, the Association adjourned until Thursday morning, 9 A. M.

THURSDAY, SEPTEMBER 25—THIRD DAY—MORNING SESSION.

The Association met at 9 A. M., and was called to order by the President, who said: The President whom you have selected for the coming year is with us this morning, and I want to congratulate you upon your selection. You have chosen a most able man, and a man who has done splendid work in this association. I am sure you will appreciate the wisdom of that selection when I tell you that the gentleman is Dr. W. W. Anderson, of Newport. (Applause.)

The chair will ask Drs. McChord, Dowden and Senour to escort him to the platform.

THE PRESIDENT: I take great pleasure in presenting to you your next president, Dr. W. W. Anderson, of Newport. (Applause.)

Dr. Anderson, in accepting the presidency, said: Mr. President, Members of the Association and Visitors: This leaves me somewhat in the condition of some Irishmen, two of whom had taken lodgings on the second floor and fire broke out in the night, and it was agreed between them one should jump into the darkness as he could not see how far it was to terra firma, and he was to call up to the other. He jumped. His friend waited with great anxiety at the window, and hearing nothing but a dull thud on the ground, he called down, "Patrick, are you killed entirely?" And Patrick, catching his breath again, said, "No, it is not that I am; it is spachless I am." (Laughter.)

I am afraid your House of Delegates has gone wrong. I do not like to question their wisdom but, in the first place, they were perhaps not aware that I am not old enough for this job. I have been trying to give them a hint in an indirect way since some of them have been telling me complimentary things in the last day or two by asking them if they could recall such a meeting when I began attending this association, and that was just about twenty years ago. I am not twenty-one as yet. It is said, every Kentucky doctor does not begin to move until he attends the State Medical Association. So I fear that they have spilled the beans.

There was a golden opportunity to have

maintained in the general management of this Association a large and respectable manager. Dr. South continues for another year and Dr. Arthur McCormack is like Tennyson's Brook to paraphrase, "Presidents may go and doctors may go, but he goes on forever." (Laughter.) I said large and respectable management. They are both large. You ought to have selected something respectable but filled out.

I was warned by Dr. Wells to prepare a speech of acceptance but you cannot believe everything you hear. For safety first, I did jot down some notes. I was not called before the House of Delegates, and so I have no speech of acceptance. That is fortunate for you.

An old Scotch woman, who watched a young divine preaching his trial sermon from a vantage point up in the gallery, objected strongly to the use of manuscript. He was not slavishly adhering to his manuscript. He shoved his sheets aside and finally he said, "Brethren, the subject is very inviting, but I shall not detain you any longer," whereupon the old woman exclaimed, "You canna, you canna, your paper has given out." So my paper has given out. (Laughter.)

Well, gentlemen, seriously, it is a great thing just to be a doctor. To change the feeble bark of humanity upon the sea of life; to pilot it through the storm and stress of disease and threatening waves of death; to guide it in self-control; to steer it to an uncertain grave between the rocks and past progress of self-destroying billows; to guide it until it is gently deep on the shores of eternity—that is a great task and worthy of great men for its doing. As I have said, it is a great thing just to be a doctor. (Applause.) I have been trying to be a doctor, and for the past ten years I have been trying to achieve an ambition which you have now frustrated and spoiled utterly.

About ten years ago your House of Delegates chose me as the orator in medicine. Other honors of this Association have been heaped upon me, and I have been associate editor of the JOURNAL for a term of years, and I have had a great ambition to live up to the worth that was implied in your confidence as expressed in the past, and I was never able to achieve that much, and now in this great honor you have put me absolutely and finally beyond the hope of achievement. I shall not be able to catch up to the honors or be worthy of them, but in so far as in me lies I shall measure my littleness against the great duties of the great office of a great Association of great men. I shall do my level best.

I do not accept the honor with the least suspicion that it is due me personally, but in the name of the Campbell-Kenton Medical Society, a royal body of men, whose loving loyalty I have never known to be equaled in behalf of men who are quietly and earnestly in their humble niches in the world trying to fulfill the duties of real doctors, with their eyes to the front looking to the great things that are yet to be and through the profession given to humanity—in the name of that society, and as a compliment extended to them, I accept the honor, and I thank you for it. (Loud applause.)

E. B. Bradley, Lexington, read a paper entitled "Modern Advances in Diagnosis and Treatment of Cerebrospinal Meningitis," which was discussed by Drs. Robinson, McCormack, Spears, Taylor, Carpenter, and discussion closed by the essayist.

W. L. Gambill, Jenkins, read a paper entitled, "Fecal Fistula."

Discussed by Dr. Carpenter.

Z. A. Thompson, Pikeville, read a paper entitled "Report of An Unusual Case," which was discussed by Dr. Carpenter and discussion closed by the essayist.

Carl L. Wheeler, Lexington, read a paper entitled "My Experience with the Obstructing Prostate."

J. Hunter Peak, Louisville, followed with a paper entitled "Prostatectomy."

These two papers were discussed jointly by Drs. Abell, Grant, and in closing by Dr. Wheeler.

Bernard Asman, Louisville, read a paper entitled "Early Diagnosis in Diseases of the Rectum."

Discussed by Drs. Carpenter, Scott, Jordan, Blackerby, after which the discussion was closed by the essayist.

J. Cecil Sparks, Van Lear, read a paper entitled "Injuries to the Hand and Their Treatment."

Discussed by J. G. Carpenter.

O. O. Miller, Louisville, followed with a paper entitled, "The Tuberculosis Clinic," which was discussed by Dr. Scott and in closing by the essayist.

On motion, the Association adjourned until 2 P. M.

THIRD DAY—AFTERNOON SESSION.

The Association reconvened at 2 P. M., and was called to order by the President.

J. G. Carpenter, Stanford, read a paper entitled, "Surgery of the Tendons."

Discussed by Dr. Layne, and discussion closed by the essayist.

J. A. Phelps, Hickman, read a paper entitled "The All Time Health Officer," which was discussed by Drs. Moore, Kincaid, McCormack, Carpenter, after which the disenssion was closed by the essayist.

Henry Gambill Stambaugh, Wolfpit, read

a paper entitled "Pellagra," which was discussed by Drs. Howard, McCormack, Thompson, Layne, and discussion closed by the essayist.

The program having been finished, President South said: This meeting has been most profitable, and I am sure we have all had much pleasure in this beautiful city of Ashland. The House of Delegates has already expressed the thanks of the Association which will be presented later to the citizens and doctors of this town in beautiful form. The hour has now come for final adjournment and a motion to that effect is now in order.

DR. KINCAID: I move we now adjourn *sine die.*

Seconded and carried.

The Association thereupon adjourned.

OFFICIAL MINUTES OF THE HOUSE OF DELEGATES OF THE SIXTY-NINTH ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL ASSOCIATION, HELD AT ASHLAND, SEPTEMBER 22, 23, 24 AND 25, 1919.

FIRST SESSION—MONDAY—SEPTEMBER 22.

The House of Delegates met in the Auditorium of the Elks Club and was called to order by the President, J. S. Lock, Louisville, at 4 P. M.

The Chairman of the Committee on Credentials presented the roll call, and it was moved that it be the roll of the meeting of the House of Delegates.

Seconded and carried.

The Secretary then called the roll and announced a quorum present.

THE PRESIDENT: The next in order is the reading of the minutes of the 1918 meeting.

THE SECRETARY: These minutes were published in the October JOURNAL, 1918, page 436. There are about 45 pages of these minutes, and I will read them if the House of Delegates desires it.

W. B. McCLURE: In view of the fact that the minutes have been published in the KENTUCKY MEDICAL JOURNAL, and we have all read them very carefully, I move that the reading of them be dispensed with.

Seconded and carried.

THE PRESIDENT: Report of the Committee on Program, W. W. Anderson, Chairman.

THE SECRETARY: Dr. Anderson has asked me to present as the report of the Committee, the Program as published, and I move its adoption as the program for the sixty-ninth annual meeting of the Kentucky State Medical Association.

C. Z. AUD: I second the motion. (Carried.)

THE PRESIDENT: Report of the Committee of Arrangements by Dr. Kincaid. (This report was passed temporarily in the absence of the Chairman.)

THE PRESIDENT: The next order is the report of the Secretary.

THE SECRETARY: I would ask that the Secretary's report be passed.

THE PRESIDENT: The Treasurer's report.

W. B. McCLURE: The Treasurer's report is published in the September issue of the KENTUCKY MEDICAL JOURNAL, page 355. There is very little that I can add to that report. We are getting poor. We have less ready funds on hand than we have had for several years, but we have some government bonds which we might sell at a sacrifice if we get hard up.

It was moved that the report of the Treasurer be accepted as published.

Seconded and carried.

THE PRESIDENT: Report of the Council.

The Secretary read the report of the Council. (See KENTUCKY MEDICAL JOURNAL, September, 1919, p. 349.)

At the conclusion of the report, the Secretary made the following motion: I move that the House of Delegates resolve itself into a committee of the whole for the purpose of discussing the report of the Council, before referring it to the committee for action, so that every member can express himself as to what is best to do for the interests of the county societies, and what can be done to make the societies to get together again and put live programs before them in order to enable us to actually do the things that are set forth in the Council's report.

Seconded and carried.

THE PRESIDENT: The Council report is now open for discussion by any member present.

J. B. KINNAIRD: At the present time, I believe there are only ten members in our society. One of our members moved into Madison county, and another moved over into Pulaski County. The difficulty in Garrard County is that we are all busy doctors; it is difficult to get a quorum. When we have a supper we can get them together. We should have gotten together and raised our fees considerably in proportion to expenses. All the professions at the present time do not seem to prosper as well as the farmer and merchant and other business men. If we would raise our prices or fees in proportion to what we pay to buy things to live on, I believe we would be more successful, and there would be

fewer disputes and no trouble in our societies. As long as our doctors are prosperous and are not in need of funds, things run along smoothly. But as soon as times get hard and we get rushed for the dollar, troubles begin. Every prosperous doctor in the State of Kentucky ought to be a member of this Association. I am much gratified with the Council's report and I hope that the membership will continue to increase and get better all the time.

HORACE RIVERS: The trouble in our neck of the woods seems to be that the doctors who stayed at home from the Army are so busy keeping the doctors that came back from getting their old practice back again that they have not time to go to medical society meetings. They do not attend as they should. I notice that our county society has a falling off in the number from what it was last year. Of course, there are one or two doctors who have not come back from the Army yet. I believe the solution of getting men into our societies and getting them interested in them is by being active and punching them up. The councilor from our district should get around to the different county societies and give them a talk which will get them in line and interested in the society work.

I have noticed especially in the counties around the lower end of the State that they have an active secretary, a man that takes an interest in his work. In nearly every instance those societies have a full membership. Practically every man in that county is a member of the county society and attends the meeting. In Graves County they have an active man there, Dr. Hunt. He is up-to-date, and they have the best county society of which I know. It is the same way in Ballard County. We are all sheep. If we have got a good leader, we will follow him.

W. B. McCLURE: This very question was up before the Fayette County Medical Society at its last meeting. The secretary had sent out a postal card to be filled out, and when it came to the question of a program he wrote on the card "no program." His explanation was that he was unable absolutely to get men to prepare papers and read them before the society. During the past year there was possibly some excuse for that as we sent so many of our doctors to the war from Fayette county that those who remained at home were absolutely overworked and had very little time for writing papers.

There are two features I think might be emphasized in improving interest in county societies. First, I believe if you will feed them, they will go. We have never had an open meeting where there was something to eat and some social feature to it that we did not have a full meeting.

We have about 70 members, Mr. Secretary, in Fayette County, which represents 90 odd per cent. of the physicians of Lexington and Fayette County. We have on an average, I suppose, 25 to 30 at our meetings, but if there is a social feature we frequently have from 50 to 60 in attendance.

Another drawing card for any society is occasionally to go on the outside and invite some member of the profession from a distance to appear before the society to read a paper. That is true not only in the medical world but in all others. You notice in a church, when they advertise that Bishop So and So is going to preach next Sunday, the church is overflowing. So it is with a profession. I do not believe in doing this too often. But if you will invite Dr. South from Frankfort there to your society, or some man equally distinguished, to read a paper you will have a good attendance.

With reference to the question of fees, there ought to be, if there has not been, some concerted action on the part of the medical profession to see to it that our fees are increased, if not in proportion to the increase in the cost of living, certainly in proportion to the increase of cost of materials. I believe that in our section this is voluntarily being done without any concerted action. There was a resolution passed before the society about a year ago advancing the fees from the ordinary fee of two to three dollars. By the way, this reminds me of an item I saw in a newspaper last week. Some of you may have noticed it in a Portsmouth, Ohio, paper, that the Grand Jury either indicted or attempted to indict the physicians of Portsmouth because they had advanced their fees. The idea of a trust was advanced. I did not see the result of it. The newspaper item stated that witnesses were being called before the Grand Jury with the view of indicting physicians of Portsmouth on that basis. I do not want the profession of Kentucky to get into the same unfortunate predicament, but I think in the county society possibly we should take a thing of that kind up. There ought to be concerted action on the part of the medical profession to increase the ridiculously low fees that have been charged in the past so that we can live as well as others.

HORACE RIVERS: We got around that in McCracken County by not having a meeting of the medical society. We had a meeting of the physicians of McCracken County and advanced our fee rate, not as a medical society, but as a meeting of physicians. We were informed by competent lawyers that we might get into that same trouble.

C. Z. AUD: The county in which I live has had two societies one known as a business society of the County of Hardin, and the other the county medical society. There is a by-law in the Hardin County Medical Society that the fee question shall not be discussed at its meeting. They meet, however, adjourn the meeting, as they have done, when the question of fees seemed important, and have called together a business meeting of the medical men. In that way they have managed that question for thirty years.

An animal goes to the fountain because he is thirsty. He seeks food because of the nourishment there is in the food. My experience as councilor is that medical men go to medical society meetings for food for their minds. As councilor I hear the constant complaint, "I am not going there, doctor, I lose my time." A few doctors will go for a good meeting, but not all the doctors will go for a good meeting. But all the doctors who have their own or their neighbor's welfare at stake will go to the fountain if their medical knowledge is filled. I want to say to you that my experience as councilor leads me to believe that the papers in a medical society should largely be contributed by the members of the society. Occasionally I think it is well to secure some one from a distance to read a paper, but do not abuse it, otherwise it becomes a menace to that society. The members of the society think that they are slighted, or they feel the object many times of the one who attends a society and reads a paper has a personal interest which he is there to tell you about. I am advising counties in my district to ask that papers be read by their own members. A short time ago I found a medical society in one of the counties in my district almost without a member present at the meeting. There were just a few. When an effort is made to elevate the standard of work of that society and an invitation is extended to some one from outside to read a paper, usually they sit down on it, and the best members of that county society will not go if such action is taken. At each meeting of the county society you should select one member of that society for an essayist, and let the president have the privilege of selecting another essayist, and in order to do this he may go out of the society occasionally to select that member. This was set down upon so that the doctor who is president of the society said "What will you do?" And they unanimously voted that they would make the meeting a report of cases and discuss them. "All right," said the chairman, "we will do that." They took a vote and it was unanimous. He called on a man on his left side to report a case. He did it, and then the president of the society asked the men present if they could diagnose that case. He said, "What is the matter with the patient?" And not a member held up his hand because the report presented was so crude and imperfect that no man on the face of the earth could tell what was the matter. And that has been my experience throughout my councilor district. Let me tell you what that county is doing to-day. The chairman of that society is going ahead and asking for volunteer papers and the members of the society, who had voted against volunteer papers, are to-day contributing those papers, so that the proceedings of the last five meetings of that society will fill the JOURNAL of the Kentucky State Medical Association with as able papers as perhaps can be sent in from anywhere for publication. They have not been fully awakened yet, but they can be awakened as I know.

It has been my good fortune to visit most of the counties in my district. I have had the cooperation of the State Board of Health and others, and I want to say to you the societies are improving rapidly. I believe they are going to be good live societies.

There is one thing I was going to propose, if you had gone on further, and that is, that we get as large a meeting of the House of Delegates and as many members of the Council together as possible and discuss these matters, and then let each one of us go home and call upon the active officers and get them together, get them interested in this kind of work. I am satisfied the county societies can do good work. I know they can. All they need is stimulation. The two things they do need is an active chairman and a good, efficient secretary. Then they will get together.

Dr. Theodore S. Bell used to say that the brightest thing in the world was the truth. Dr. Thompson, in teaching at the University of New York, fifty years ago used to teach his class that truth was the brightest thing in the world. Dr. Bell used to say that he could not see how it was possible for any man in the medical profession to take time to sleep. He had the four corners of his room filled up with medical journals which he had read. There is so much to learn in the profession of medicine that he could not see how it was possible for an active practitioner to go to sleep. It is so to-day. A novel is interesting, but it is not any more so than the information you obtain from reading your medical journals. Look at the things we have discovered and what great progress science has made. We are not doing these things for ourselves; we are doing them for others. Why am I busy as a councillor? Because I am making myself as useful as possible every day of my life. (Applause.)

I would leave the medical profession if I knew I could do better. I would have followed law or theology, but I know where great good can be done and I know where it has been done. No theologian teaches better doctrine than you doctors. No lawyer does as much as you do for the people, and while we are able to do all these things and protect them from contagious and infectious diseases, save them and prolong their lives, we are likewise making them as useful citizens as ourselves.

E. N. HALL: As councilor of the Third District, I visited as many counties as I could until affliction overtook me. Then, those who were left at home were very busy on account of a great many practitioners having gone to the war. Now, they are coming back, I feel there is a great work to be done in the county medical societies. Dr. Aud struck the keynote when he said that we need an active county president and an even more active secretary. We unfortunately lost ours for a while, and we have not had as active a society in our county as we had when we had the best secretary in the State, who was an active worker.

I believe the programs of our meetings should be interesting, so interesting that the members of the society will be anxious and sacrifice their time to go there to hear papers and discussions. I think, too, an imported essayist occasionally will be beneficial, and I have seen it prove successful. I feel that we are a little lagging; there is too much lethargy about us, we are not as active as we should be. Even the members do not always do their duty, and when a man is put down to read a paper he should feel a responsibility to do his duty. There is much work to be done because we are failing to do our duty. I feel now that the war is over and the boys are back the men who have worked so hard should get together and heartily cooperate with one another and with the officers, and with such activity put forth, with every effort possible put forth, our societies will be increased in interest and in benefit.

I believe that occasionally a banquet is necessary, but the most important thing is to feed the mind instead of feeding the stomach. We are all more or less gormandizers. It has often been said that people dig their graves with their own teeth. We should not eat so much that it makes us inactive in mind. We should take hold of those thoughts and things that will better equip us for the great work as doctors in our community.

A MEMBER: We did not hold meetings of our society on account of some of our members being in the Army. The secretary moved out of the county and did not turn over anything to anybody. Recently we got started again and elected a new secretary, and I hope we will have a better society.

F. A. STINE: I can only speak of the Campbell-Kenton County Medical Society. When the war came on we lost about forty odd members who entered the service, and the rest of us, when an epidemic of the flu came on, were busy answering calls; hence interest in the society work was not as great as it formerly was. Since the close of the war we are doing more active society work, and we are able to report this year more members than we have had for two years. Our membership I believe is about 113. We have been a little lax, and there is one thing I want to speak of, and that is with reference to the doctors who stayed at home and did the other men's work. When the call to arms came there were none of us who were not willing to go forward and respond to our country's call. None of us knew who would be the next, and at that time we all promised ourselves that if we stayed at home we would take care of the practice of others who entered the service, and give them a certain amount of fees in return, and on their return we would turn back to them their patients. I want to ask all of you, particularly you boys who stayed at home, if you have lived up to your promises. If you have not, you cannot look your fellow practitioner in the eye who went to war with the same good grace as you did when he left. I find in a good many instances in my community that has not been done, and until it is done there will be a feeling between the men who stayed at home and those who went. I want to say right now, those who went are entitled to what you promised them. If you do not do it, you are just as much of a traitor as the Germans were. When you go to the German he cried "Kamerad," and at the same time did not hesitate to stab you in the back. Be true and honest to your fellow practitioners and the society will progress all the time.

J. W. KINCAID: There does not seem to be any desire to prolong this discussion, and I move that the committee of the whole rise and listen to the report of the Committee of Arrangements through its chairman, Dr. Bryson.

F. A. STINE: I would like to add to what I have already said that we elected a county health officer, but before doing so we passed a resolution that he was only to hold office during the absence of the regular health officer. Dr. Shaw, and he was to divide fees with Dr. Shaw's wife, and every month she got her check. When Dr. Shaw came back home his business was turned over to him and we reelected him health officer.

A. J. BRYSON: As president of our local society I called on every doctor who was eligible to membership in the society but not yet a member, and by so doing I got practically every eligible physician to become a member. Our membership is as large or larger than it has ever been. Our meetings have been more or less interesting. We have had patients exhibited at the meetings, and the cases reported and discussed. I believe a society can only be made interesting when its officers are good active men. We have had some excellent papers read as well as other features in connection with the meetings.

C. Z. AUD: I wish to second Dr. Kincaid's motion.

ARTHUR T. McCORMACK: I have been in fifteen counties since I have been back home and have noticed a very peculiar but interesting thing, and that is, the character of the discussions now as compared with those before the war. Too frequently we were content to be impressed with and relied on the thoughts of other men in prewar papers, but now I notice that men speak with authority. They speak as if they had experience while the war was going on.

The Jefferson County Medical Society the other night had an interesting discussion on pneumonia. One of the most inspiring things was to see men stand up and talk about pneumonia, not as a matter for controversy one way or another but to talk about the facts they saw in hundreds and hundreds of cases, and they talked about it interestingly, inspiringly and constructively. The profession has made a tremendous gain. There has been a tremendous forward movement, and in fact everybody is keener, and we will not know all the things those fellows have learned unless we get together and hear them.

I went to Boonesboro with Dr. McClure a short time ago, and I wish every doctor in Kentucky could have been there. It was the most inspiring meeting I ever saw or heard. Every member of the county was present but one. Everybody knows that the Madison County Medical Society a few years back was not a strong active body; it was not an harmonious active body, but this has all been changed and there was a desire manifested to make the county and people healthier and to keep them well, and they are now working at the job. The results are interesting. They are making money in doing that because they are worth the money. A good many doctors do not succeed in the practice of medicine because they do not observe and study their cases carefully. They do not amount to much as practitioners. The thing that impressed me was the harmony and frankness with which they discussed everything and went over their business affairs. They had thought out the things necessary for them to do, so they could be properly maintained and educated and have enough capital to run on; yet they were not doing it as a money-making scheme. The idea was if they delivered the goods they were entitled to adequate support. They had a good program, they had a cracker jack good dinner, and a cracker jack good meeting. It was a delightful place to be.

The question of fees is a very important matter, but the fees cannot be raised by the county medical society or by a combination of doctors in the county. It must be done by the doctors as individuals and done by them only when the necessity is shown for doing it. Doctors ought to get together and carefully consider the matter and see whether they are being adequately compensated for their services, and whenever they were or are not, it is proper and right for them to discuss it among themselves and for them to agree not on a scale of fees but on a minimum schedule of fees. The higher grade doctors will charge more than the average practitioner, and they ought to. It was never intended that every doctor should be paid the same price any more than every teacher or lawyer should get the same price. The fees should be regulated so that a minimum will support a competent man and then stop. That is important to every county medical society. When we go back home we should call a meeting of the county society and talk with them intelligently about it and get intelligent action when we do that. As soon as you go back point out the things talked about at this meeting and get them to do the same sort of things we are talking about here. Make them understand why county society meetings should be well attended. Put before them the Shelby County, Campbell-Kenton County, or Harrison County Medical Society as examples of good, real societies in which the greatest work is being done that I have seen done anywhere in any state. When you think of what has been accomplished by these societies and the interesting papers and discussions they put out from year to year, it is hard to estimate the progress that has been made. When I look back in my comparatively short lifetime and see again in my mind's eye the first appearance of Dr. Anderson and Dr. Stine at a meeting of the Kentucky State Medical Association as representative of a struggling young society, those two men in Campbell-Kenton County—as I look back to the time when most of the members of the profession in that county were really Ohioans and met in Cincinnati and compare that time with now, the progress we have made is simply wonderful, and we have just got started. We have

had a new rebirth as the result of this war, and the time is ripe for us to get together and actually do the things and deliver the goods for the greatest profession in the world. (Applause.)

Somehow or other, I do not know what it is, but in Kentucky our roads are not so much better; our schools are not so good; we have lots of bad things and some good ones, but our mothers endowed us with a something that makes Kentuckians attractive people when they go right. The thing for us to do is to go right, and we will have the greatest profession in the greatest State in the world, and we must lead it towards that goal if we are going to get all these things we are after. (Applause.)

The motion for the committee of the whole to rise was put to a vote and carried.

THE PRESIDENT: We will listen to a report from the Chairman of the Committee of Arrangements, Dr. Bryson.

A. J. BRYSON: We have nothing on for to-morrow in the way of social features except the address of Dr. Abell and Dr. Barrow at the First Presbyterian Church.

On Wednesday from 2 to 4 P. M., the wives of the doctors of Boyd County will entertain the visiting wives of physicians and sweethearts of members of the society. A good time is promised.

At 5 o'clock we have arranged for a boat ride on the Ohio, through the locks. We will have refreshments on board and music.

On Thursday morning our ladies will take the visiting ladies for an automobile ride and show them about the City of Ashland.

DR. KINCAID: There is one matter I would like to call attention to, and that is, this hall (Elks Hall) will be the place of meeting of the scientific sessions, hence after to-morrow it will not be available for the meetings of the House of Delegates. Arrangements have been made to hold the meetings of the House of Delegates in the Auditorium of the First M. E. Church.

On motion, the House of Delegates adjourned until 7:30 P. M.

NOTE: No meeting of the House of Delegates was held in the evening because a quorum was not present.

September 23—Second Session of the House of Delegates.

The House of Delegates met in the First M. E. Church and was called to order at 8 A. M. by the Secretary.

Owing to the temporary absence of the President, Dr. Horace Rivers was elected chairman pro tem.

THE SECRETARY: I want to say a few words on the subject of morbidity reports so that my remarks when printed in the Journal will reach every member in the State.

The members of the House of Delegates will remember that about eight years ago a resolution was passed by the House of Delegates requesting the State Board of Health to inaugurate morbidity reports. The physicians of Kentucky are familiar with the fact that when the vital statistics law was passed there was included a fee for physicians. This is the only state which pays that fee. We are proud of the fact that it was done. We refused to have the law passed until a fee was paid. It recognizes that it is only right for doctors to be paid for public services just as other people. In connection with morbidity reports we tried early to take the position as a state board of health that it was not the right or square thing to put the doctors of the state to the expense of making a report for example, of the flu as a matter of public safety and being put to expense for performing a public service, and so, when the matter came before the board, we made an appeal to the Public Health Service, and obtained in the last four months their consent to appoint each county health officer an assistant collaborating epidemiologist. Each county health officer and each city health officer is a commissioned collaorating epidemiologist of the United States Public Health Service for which he gets a dollar a year. This gives him the franking privilege, so that the reports of reportable diseases can be sent to him on franked cards, and the card he will return can be franked to the doctor or sick person. The importance of prompt notification is evident. Where we have part time health officers it is apparent they cannot do the kind of work which is necessary to do to prevent the spread of the diseases which we now call preventable. It is impossible for them to give as much time as a health officer should. But the value of such a report as this will be evident to any one who stops to think. When we can say to an organization like the Rotary Club, before which I appeared last night in Boyd County, there were so many cases of each of these preventable diseases reported last month, and there were so many deaths from them; when that statement is made it is an actual invoice, the people of the counties and state will understand that something must be done to remedy conditions. There is no question we are not getting anywhere with our health organizations as far as delivering the goods to the men, women and children, in their homes, in their work, is concerned. There is no question we are not getting anywhere with health organizations as far as delivering the goods to the people at home, to the people out in the country, are concerned, until we have a paid organization, and the man who is

a health officer will have to be paid as well as the man who practices medicine. The man who is a successful practitioner of medicine is going to continue to practice medicine if he receives more compensation for it than he does for practicing health, and the compensation has got to be made adequate if they are able to deliver the goods. These things are obvious. We have not thought about that additional expenditure of money as a necessity, yet we know perfectly well that this additional expenditure of money will mean much less expense in the long run.

I want to say a word about reporting venereal diseases which is the only matter about which there is any controversy in the State. Some of our doctors object to reporting cases of venereal disease. This is a matter that has been taken up in every state in which morbidity reports have been considered—reporting venereal diseases has been the subject of controversy. We have adopted the so-called Australian system of reporting venereal diseases in Kentucky, and as soon as the profession understands it I apprehend it will be the most popular part of the whole matter. The report card which you get is a blank for the name and address of the patient. If the case is one of venereal disease and the patient is a private patient in whom you have sufficient confidence that he will carry out your instructions, well and good, you report that case by number and keep your own record of it. Report syphilis No. 1, gonorrhea No. 1, or chancroid No. 1, and No. 2 and No. 3, and so on, and keep your own record or register, and nobody is the wiser but you and the patient. There should be no report of the name or location of the patient. Every doctor who is practicing medicine and is treating venereal diseases realizes that the important thing about treatment and the reason cases do not get well in the hands of a competent physician is because they quit taking treatment too soon. That is where the new law has its greatest effect. You notify the patient the first time he fails to return to continue to take treatment; if he in any way endangers the public health, then you are obliged under the law to report his name, and you notify him to come back to you as often as necessary, and the law requires him to come, and when he fails to come you report his name. That gives the profession a legal authority they never had before. In coming in contact with people who are careless about their morals and who contract venereal disease, they can compel them to continue treatment until they are no longer dangerous, and as soon as the profession realizes the importance of it there will be no objection to reporting venereal diseases, not reporting the cases by name but by number, provided you are willing to assume the risk of your patient's failure to comply with the regulations. You keep the names yourself, and if you decide at any time this or that patient is not taking his treatment and continues to be infectious and will not take proper care of himself, you report him to the health officer, and he puts him or her in quarantine just as he would smallpox or any case of infectious disease. The result of that is excellent as the members of the profession will understand, and we would not have it otherwise.

Any patient can change his physician any time he pleases, but the method for changing physicians is fixed by the law. If a patient of Dr. Hall's for instance, desires to go to Dr. Bird, he goes to Dr. Bird and tells him that Dr. Hall has been treating him. Dr. Bird in turn notifies Dr. Hall he has taken his patient, and Dr. Hall understands that his patient has been transferred to Dr. Bird on a card for that purpose. The whole matter at the beginning will be a little complicated. The law will be administered with a sympathetic understanding with the physicians of the State, but the important thing is, we want to be the best State in the United States in making morbidity reports.

Mississippi has now the best system, but not exactly the same system which was devised by us, and they are reporting all their cases of malaria and are doing wonderful work. As a result of that reporting system they have secured the cooperation of the legislative bodies, they have secured an amount of respect and confidence from the people of the State that is absolutely incalculable, and I believe with the making of morbidity reports we will lay the foundation for a real health organization just as vital statistics, death and birth reports have begun the operation of our system.

Mr. President, I would like to move that this House of Delegates approve the system of morbidity reports inaugurated by the State Board of Health, and that we direct the President and Secretary to extend to the United States Public Health Service our appreciation for the great assistance they are now giving us in this matter.

R. C. McCHORD: I second the motion. (Carried unanimously).

THE PRESIDENT: The next report is that of the Committee on JOURNAL, Horace Rivers, Chairman.

HORACE RIVERS: The only report I have to make is what you have seen. You have read it and have doubtless appreciated it. If you have not, you are dense. I believe the KENTUCKY MEDICAL JOURNAL is one of

the best medical journals I have seen published by a state society. Any man to appreciate it has only to get inside the covers of it and read it. I am a reader of medical journals. I take a great many of them, but I believe I get more pleasure and profit out of our State JOURNAL than any other journal I take. There are more good things in it, and if we will cultivate the habit of reading our State JOURNAL and appreciate it as it should be appreciated, we will make a better journal and a better profession. That is the only report I have to make.

I cannot make a report of the financial condition because I do not know anything about it.

THE SECRETARY: As to the financial side, the JOURNAL cleared about $200.00 more than came from advertisements alone. Not counting the subscriptions, the advertisements have paid for the publication of the JOURNAL and made a profit of $200.00.

A most interesting part of our JOURNAL is that it publishes every single paper that is sent to it. It is not the most scientific medical journal that is published, but it comes nearer being an actual reflection of the thoughts and actions of the doctors of Kentucky than any other journal that is published by any other state. There is no editing committee to pass on or reject articles. If a county medical society has a paper read before it, and it is a bad article, and they send it in, it is published. The JOURNAL is open to any member of the association to say anything. The JOURNAL is the medium of communication of the doctors of the State, and the doctors can say what they please about any article or anything else as long as it is not libelous. The doctors ought to feel a certain amount of responsibility in regard to this matter.

Last year, or the year before last, Dr. Carpenter read an article on some subject relating to diseases of the eye, and several of our colleagues who are specialists in that branch of the profession got on their hind legs and raised the deuce about that article. I suggested that they write out their objections and we would publish them in the JOURNAL. They said that would not do any good because Carpenter would raise hail Columbia. (Laughter.) There is an amount of responsibility resting on your shoulders in this regard. If an error appears in the JOURNAL, somebody should write us and call attention to it. We should get at the truth and by controversy the truth is arrived at, and for that reason we would like to have you use the JOURNAL more frequently for communications.

Let me say a word or two with reference to the publication of minutes. You cannot publish minutes without having meetings of your county societies. We have had fewer minutes for publication in the last four months than any year since the publication of the JOURNAL. If the members of the Association, and particularly those of county societies, will send in their minutes of meetings each month, they would make profitable and interesting reading. Many of you will remember with great delight the splendid reports that Dr. Steele Bailey from Dr. Carpenter's town used to send in for publication. At every meeting of the Lincoln County Medical Society he would send in a report that sparkled a little and said some personal things about what the doctors had said and were doing, and these Lincoln County doctors came to the meetings because of the hopeful and bright things that Dr. Bailey said about them. He wrote to them. He was actively interested in the work of the society, the moral of which is that if the secretaries of county societies will make reports of the meetings and send them in to the JOURNAL they will be read with great interest. It is always well to have a light lunch before the meeting if possible. This will nearly always insure a good attendance and good discussion. Put the lunch first. (Laughter.) Every society ought to serve light refreshments before a meeting, and especially at meetings to which state officers are invited. At that time I do not think emphasis ought to be put on the word "light."

REPORT OF THE COMMITTEE ON RED CROSS.

I am going to make a report for the Committee on Red Cross and in doing so I would urge the physicians of the State to assist the Red Cross in the drive that will shortly be made for membership. Every individual in Kentucky who gives a dollar to the American Red Cross buys a ticket that admits his interest in a public health campaign. He is not only doing a wonderful charity because he is already supporting the disorganized peoples of the world in foreign countries, but he is doing a much greater thing, he is buying a ticket which admits him to the great health organization of the world.

The International Red Cross undertakes a campaign by means of which they hope to reach every place on earth where disease exists, and where the people themselves are not able to rid themselves of it.

In this state there are many counties which ought never to have contributed to the Red Cross in the sense that the money should be taken away from those counties, and yet it is an interesting thing of which I know and can point to with a great deal of pride. Take the mountain counties of Kentucky, the counties in which there are few railroads, the backwoods districts of the State, and I find they have not only made the greatest contributions

to the Red Cross in proportion to their quotas of any counties in the United States, but more of them have paid over 100 per cent. of their contributions than any other place in the United States. (Applause.) You take counties like Knott that are represented here, and it is wonderful what the people did. We have considered Knott a poor county, yet utimately it will be one of the richest counties in the State. It is just beginning its development, and from Knott County they exceeded their quoto more than any other county in Kentucky.

Rowan County has not the advantage that Knott County has. It has absolutely no intrinsic value. Except a few of the semi-fertile valleys, most of the hillsides are as barren as it is possible to conceive, yet Rowan County exceeded its quota four or five times. The spirit of its people was wonderful, and if we go back to that, following up that thought in their minds, we have made this contribution, this money has been used, and we have done our part in the development of the world by making this contribution, and if we go back to them with the idea that they must not only pay an admission ticket to the show, but be actual participation in the show, and help to develop these conditions in their own county which we are developing in the whole world elsewhere, great good will have been done.

I hope that each delegate when he goes back to his county society will make every doctor understand that he is a natural member of the American Red Cross. Starting with him as a nucleus, every man, woman and child should be brought into the Red Cross until the Red Cross represents the sentiment of the whole of Kentucky.

Incidentally in this connection, althought it is not a Red Cross matter, I want to urge upon the doctors in the service the importance of connection with two organizations, one of which is the Medical Veterans of the World War, of which the dues are one dollar a year. This includes members of draft boards. It is of the utmost importance that the doctors assist in the formation of local posts of the American Legion. The organization of the American Legion is a matter that cannot be stopped. There is no possibility now of not organizing the soldiers of the country. The important thing is to help that organization so that it may be put on a secure foundation and managed right. It is important that it should not get into partisan politics. It is furthermore important that it will safeguard in every way the material interests of the soldiers. It should not become a selfish, sordid organization, but in the broadest sense of the word the doughboys of the United States should be organized with a view of developing and preserving for this country the great principles for which we actually fought. (Applause.)

The medical profession of Kentucky is accustomed to doing things. We are accustomed to take our share of responsibility, and it is very important now that we take our part in a big way in the continuation and success of the Red Cross and in these other two organizations that will follow as the result of the war.

JOHN W. SCOTT: In regard to the Red Cross, I think with Dr. McCormack that the Red Cross is one of the greatest organizations in the world, but it occurs to me from the present plan that there is risk of interfering with local organizations for relief. In our county, for instance, we have a public health nurses association. If the Red Cross comes in and attempts to do public health work and employs nurses, it leads to a duplication of effort. The question is whether it is best to handle the matter in the way it is. In those counties where funds have to be brought in from the outside, it is possible the Red Cross workers can go in and do the work. It is much better for health activities to originate and be paid for in the communities in which the work ought to be carried on.

J. N. McCORMACK: In connection with the Red Cross, I am going to say something in which you will all be interested. Had it not been for the assistance which the Red Cross and the United States Public Health Service gave to the State Board of Health during the epidemic of influenza, conditions would have been far more disastrous than they were. With the assistance of these organizations, and they paid most of the money, we sent thirty-six doctors to Camp Taylor to assist the regular staff. We sent 196 doctors not only to the mountain counties but to a great many of the best counties in the State. We sent out 218 nurses. There were 86 Sisters of Charity who volunteered their services without pay, and they went wherever they were asked to go. We did not have the funds. Our regular appropriation furnished barely enough for overhead; there were a good many incidental expenses we did pay, but the Red Cross poured out their money like water. Mr. Hines of the State Council of National Defense met with us every day; we went over the whole situation, and Mr. Hines did not have any money. His appropriation was limited, but Mr. Thruston said he would see that we got the money, and we did.

I believe that not only every one of you ought to be members of the Red Cross (I have been one myself for many years, ever since I knew of its good work) but you ought to speak a kind word to your patients and advise men and women to join, and advise, as

I did, every member of my family to join, and my servants, and I paid their fee into the Red Cross because it is a benevolence with more hope to it than any other organization that exists in this country. We ought to try and get every good citizen into it.

There ought to be a hospital in every county in the United States where one does not exist. There ought to be schools for nurses. A course of teaching ought to be laid out by the Red Cross to make it uniform, with the medical profession supporting, and the county and state paying expenses. It is the most promising organization existing in this country, and one of the most liberal in all its plans.

Dr. McMullin was in Edmonson County. He was there without funds. The government paid his expenses, and there were one or two nurses with him; but the Red Cross representatives had their goods and supplies sent on in advance, and when he was there they did not wait to get authority. The fiscal officials wanted him to come back to hold a clinic. They had a great deal of trachoma and he relieved a good many of the cases, but feeling sure he had not finished the work, he said he would come back in six weeks and take up the work again. That is the spirit pervading the people there. If you will join the Red Cross you will not only be serving a useful purpose for yourselves and profession but for the the entire people of the State. As you come in touch with the people in your daily work talk to them about the Red Cross for the next six months and tell them what the Red Cross did during the terrible epidemic of influenza. I advise people to join that organization if they have to cut down expenses somewhere else. Let us keep this great organization up and get every good man and every good woman in the State interested. (Applause).

J. G. CARPENTER: I am interested in a memorial hospital for the soldiers. The time has come when every county should have its own hospital. Things are ripe now for it. When I go home I shall talk to the people about this memorial hospital, and I am going to deliver a lecture in every church in every community and in every schoolhouse. I am going to hammer away at the rich misers and urge them to shell out. I believe in acting like the cowboy who took up the collections by sticking a 44-calibre gun under the nose of each person and telling them to shell out. (Laughter.) It is due to our boys. Interest in it should never fail.

We held a Red Cross meeting in our town which was presided over by a county judge. We showed to the audience how ignorant, how abominable, how miserly, some fiscal courts are. I made a motion to take the county judge and magistrates out and bury them alive on account of ignorance. (Laughter.) I said that ignorance was a crime; that it was a disgrace to elect ignorant magistrates and ignorant county judges. Then I said I was ready to put mourning on the county judge's office, and that he deserved to be buried alive; that we had never had an intelligent judge in my county but twice. I said we needed wide awake and progressive men for judges, and magistrates should be elected for judges who had made a success in their private lives, and that a man was not fit to be a magistrate unless he was a success in his private affairs. I made them so ashamed of themselves that the Fiscal Court appropriated at once $50.00 each month to have an all time nurse in our county, and soon we will have an all time health officer. I am going to work hard for that memorial hospital to the soldier boys, and all you men can have hospitals in your counties if you work hard for them. (Applause.)

DR. McCORMACK: That is, where you have no hospitals?

DR. CARPENTER: Yes.

ARTHUR T. McCORMACK: Replying to the point raised by Dr. Scott, everybody who has come in contact with the Red Cross realizes the enormous danger in a great organization like this, with an enormous impetus spread out too thin, without trained workers, without trained managers, wasting effort and duplicating existing agencies, and destroying successful existing agencies. Nobody understands this better than the officers of the Red Cross themselves. The matter needs very careful and thoughtful consideration by them, and they are trying in every possible way to obviate those things.

At the recent meeting of the Association of State and Provincial Health Officers, held at Atlantic City, an executive committee was formed, of which I am a member. As your representative, in that connection I would like to say that every effort I have put forth has been as your representative. Because of your unanimous support and the strength you have put behind me, I have been selected as representative on many such committees and in many such ways. This organization has the function of correlating the health agencies with the official agencies along these lines in the different states. Our first meeting was with the National Tuberculosis Association with the state organization of which we have been in close affiliation for many years, and we formed a strong plan of agreement which is practically complete, absolutely avoiding any possibility of the kind of friction that would injure the work of either. The agreement is so made that if Dr. Lock and I should

disagree about anything, he as Executive Secretary of the State Tuberculosis Association and I as State Health Officer can have an arbitration committee formed, representatives of the State Boards of Health, officers for this particular section, and a representative of the Tuberculosis Association of this particular section, and in that way get together and the cause for friction is removed. In a similar manner negotiations are in progress which will make the same arrangement with the Red Cross.

In regard to nursing activities, under the state supervisor of nurses the Red Cross shall have a State supervisor who will supervise in those countries in which the Red Cross itself has nurses. A county like Fayette has already a well recognized nursing system and can be strengthened with other nurses, placing the nurses under the control of the local organization. If that is not done there would be duplication of effort.

In Owensboro they have had for many years a tuberculosis nurse and an excellent visiting nurse. Suppose the Red Cross secured another independent nurse, they would have three separate nurses and without any correlation between these there would be duplication of effort and friction, and the state supervisor would be compelled to keep one assistant there to obviate that difficulty. That is one of the great dangers from any effort like this. The important thing is, if we organize this great movement, we should take part in guiding it so that it will actually deliver the goods.

On motion, the House of Delegates then adjourned.

THURSDAY, SEPTEMBER 25—THIRD SESSION OF THE HOUSE OF DELEGATES.

The House of Delegates met at 8 a. m., and was called to order by the President.

THE PRESIDENT: The first thing in order is the roll call.

THE SECRETARY: I ask unanimous consent that the roll be dispensed with. It is obvious everybody is here at present, and it is hardly worth while to consume twenty or thirty minutes in calling it.

THE PRESIDENT: Without objection, we will dispense with the roll call.

The time has now arrived to nominate a president for the succeeding year. Nominations are in order.

W. E. SENOUR: It is with mingled feelings of both pride and pleasure that I present to you the name of a man who is well and favorably known to every doctor in this grand old Commonwealth; a man who by reason of long and faithful service is entitled to the highest position that we can give him; a fearless leader, a good organizer, a wise counselor. Whether you come from the everlasting hills of eastern Kentucky, or whether you come from the Pennyroyal district near its western border; whether you come from the Blue Grass region, the home of the fleet-footed thoroughbred, or whether you come from the confines of Tennessee or the evergreen shores of the muddy Ohio, you will never again have the opportunity to vote for a stronger, manlier man. The records of his deeds and works in connection with this organization are among the best in the United States; they run like a vine around the memory of each and every doctor present. Elect him, he will not only dignify the position but he will create enthusiasm, and the progress of the present year will be one of the greatest in the history of this organization. Let us elect him by acclamation. He will honor us as we honor him—Dr. W. W. Anderson. (Applause.)

R. C. McCHORD: I desire to second the nomination of Dr. Anderson, and I move that his nomination be made unanimous.

Motion seconded by Horace Rivers.

THE PRESIDENT: Are there any further nominations?

J. E. WELLS: I move that nominations be closed, and that the Secretary be instructed to cast one ballot of the House of Delegates for the election of Dr. Anderson.

THE SECRETARY: I desire to second the nomination of Dr. Anderson, and I do so for a special reason. I think it is very important that the delegates think very seriously, as I know they have done, in formulating the list of officers of this Association. There are two thoughts that always come to us in selecting a president, one is to honor the man because of what he has done; the other is to honor the man not only because he has made a record of performance, but because of what he can do for the association, and I want to insist that the membership should seriously consider throughout the year the selection of their officers, the men who can do most for the coming year for the Association. We have gotten the conception, some of us, that the important thing to do is to honor a locality by the selection of a man as president of the Association. That is not true. Our job is to honor Kentucky in the election of our presiding officer. Our presidents and a number of them are here, know that the presidency of this Association is no empty honor. It is not a graveyard where a white spulchre is reared and labeled, put on a man to continue his fame throughout the ages. The important thing for the Association to do is to select men who will go into the county societies and carry its banner and inspire the members of the county societies with the importance of their work. In so far as we have an ef-

fective county society, we are a success. Whenever we have no effective county society, we are a failure, and the president, above all other men in the Association, is the man who can do that work.

As we look back over the history of the Association, we find that there are among those present Dr. McChord, Dr. Shirley, Dr. Kincaid, Dr. Richmond, and Dr. Aud, men who devoted half a year of their presidency to its work. Then as we think, from time to time, we have done the other thing in the selection of presidents, and before the year was out a man, who because of his years sometimes in societies where there has been personal conflict, has been elected as representative of a society rather than as representative of this Association, who has done nothing for the Association during the year and passed through the harness without making an effort.

In seconding the nomination of Dr. Anderson as an officer of the Association, I do so in consideration of what he has done and what he can do. He is a great, big, young man, and with his forty years will carry out nobly the traditions of the office of president, following in the footsteps of the great men here, and he will continue to do so, and because he is elected president he will feel charged with greater responsibility for the rest of his life. He will be helping us with his wise counsel, and in considerating the election of a president in future years I pray that you select a young man like Anderson, fired with his zeal, standing on his sort of principles and platform, and send us a class of men not as representatives of a locality or county but representatives of the great State Medical Association of Kentucky. Then, with such men, we will continue as we have started for the last sixty-nine years, to be the strongest and the best and the most closely knit organization in the United States and continue to deliver the goods. It is with great pleasure that I second the nomination of Dr. Anderson.

THE PRESIDENT: Are there any other nominations for the office of president. If not, I will put the motion. It has been moved and seconded that Dr. W. W. Anderson be elected by acclamation, and that the Secretary be instructed to cast one ballot for his election. Those in favor make it known by saying aye; contrary minded, no. The motion is carried, and Dr. Anderson is declared duly elected president.

Nominations are now in order for Vice President.

J. E. WELLS: I desire to place in nomination Dr. P. C. Layne, of Ashland.

THE PRESIDENT: Are there any further nominations?

HORACE RIVERS: I desire to second the nomination of Dr. Layne.

W. B. OWEN: I nominate Dr. Irvin Lindenberger, of Louisville.

HORACE RIVES: I nominate a gentleman from the Pennyroyal district, Dr. D. J. Travis, of Lyon County.

THE SECRETARY: I move that the three gentlemen nominated be elected as the three Vice Presidents of the Association.

Motion seconded by several.

THE PRESIDENT: Are there any further nominations?

The motion of Dr. McCormack was put and carried.

THE PRESIDENT: Election of a delegate to the American Medical Association to succeed Dr. W. W. Richmond.

THE SECRETARY: We have had heretofore four delegates to the American Medical Association, but from this time until the next census we will have but three, due to an error in making a report last year, and there will only be one delegate to elect to succeed Dr. Richmond.

W. B. McCLURE: I move that this grand old man (Dr. Richmond) be elected to succeed himself.

I. A. SHIRLEY: I second the motion.

THE PRESIDENT: Are there any further nominations?

J. B. KINNAIRD: We have a number of men who are eligible for this office. I believe we ought to send or elect some young man as delegate to the American Medical Association, although I have no objection to Dr. Richmond being re-elected. He is a great man, but he has held the office for a long time. I really think it would be a good idea to nominate some younger man, although I do not know who to nominate for this position.

It was moved and seconded that nominations be closed. Carried.

The motion of Dr. McClure was then put and carried, and Dr. Richmond was declared duly elected delegate to the American Medical Association to succeed himself.

THE PRESIDENT: The next order is the election of a councilor from the Fifth District. Dr. B. C. Frazier's term expires. Nominations are in order for this office.

W. B. OWEN: I wish to nominate for the office of councilor of the Fifth District, C. G. Hoffman, President of the Jefferson County Medical Society. Dr. Hoffman was elected.

THE PRESIDENT: Councilor for the Sixth District. R. C. McChord is the present incumbent, and if he were not present I would say some nice things about him.

J. E. WELLS: I nominate Dr. McChord to succeed himself.

Motion seconded by several delegates.

THE PRESIDENT: Are there any further nominations?

Motion put to a vote and Dr. McChord was declared elected councilor for the Sixth District unanimously.

THE PRESIDENT: The Eleventh District. Councilor to succeed Dr. Lock for the unexpired term. His term has expired.

THE SECRETARY: I wish to nominate Dr. J. S. Lock, Barbourville, for the position of Councilor of the Eleventh District. He has been a member of the Council for years, and while his temporary residence is in Louisville as a state officer of the Tuberculosis Association, his membership is in the Eleventh District. His duties will be put in in this district, and I think it is very important that the Association express its confidence in Dr. Lock and secure another traveling representative who will be practically everywhere and who will carry on the splendid work that Dr. Lock has always done. I talked with the representatives from the Eleventh District before making this motion, and it will be not only agreeable, but it is the unanimous wish of the physicians of that district that Dr. Lock be continued in this office.

The nomination was seconded by several delegates.

THE PRESIDENT: Are there any further nominations? If not, I will declare Dr. Lock elected.

Orator in Medicine. This is a most important position that you are about to fill, and I will ask for nominations for Orator in Medicine for the coming year.

J. G. CARPENTER: I nominate Dr. J. B. Kinnaird, of Lancaster.

R. C. McCHORD: I second the nomination.

W. B. McCLURE: I move that nominations be closed and the Secretary cast one ballot for the election of Dr. Kinnaird.

Seconded and carried.

The Secretary cast the ballot as instructed and Dr. Kinnaird was declared duly elected.

THE PRESIDENT: Orator in Surgery. Nominations are in order.

E. B. BRADLEY: I nominate C. A. Vance for this position.

The nomination was seconded by several delegates.

W. B. McCLURE: I move that nominations be closed, and that the Secretary be instructed to cast one ballot of the House of Delegates for Dr. Vance as Orator in Surgery.

Seconded and carried.

The Secretary cast the ballot as instructed and Dr. Vance was declared duly elected.

THE PRESIDENT: Place of meeting for the coming year.

JOHN W. SCOTT: In behalf of the Fayette County Medical Society, I wish to urge the selection of Lexington as the next place of meeting of the Association. The whole Blue Grass will welcome you, and by the time of the next meeting we will expect to have a new hotel ready for occupancy. The accommodations will be ample, and our hearts and our homes are already open to you, and our arms will be equally open.

J. G. CARPENTER: I move that we accept the invitation to meet in Lexington next year.

J. B. KINNAIRD: I second the motion. (Carried.)

THE PRESIDENT: Report of the Committee on Constitution and By-Laws.

J. W. KINCAID, Chairman: I would like to ask that the Committee on Constitution and By-Laws be continued. We have no report to make at this time, but hope to be able to make a report at the next annual meeting. There are changes it would be wise to make in the Constitution and By-Laws, and it is too late to make them now. Those changes can be formulated and presented at the next meeting of the House of Delegates and acted on.

THE PRESIDENT: Without objection, the Committee on Constitution and By-Lays will be continued and allowed to report at the next annual meeting.

THE SECRETARY: There is a report of the Committee on Reports of Officers, with Dr. Henderson as Chairman. I would like some delegate to move that the reports as printed in the KENTUCKY MEDICAL JOURNAL be received, and also that the report of the Auditor be approved.

IRVIN ABELL: I move that we accept the reports of officers and the Auditor as printed in the JOURNAL.

Seconded and carried.

J. N. McCORMACK: While I am not a member of the House of Delegates, but as an outsider I want to offer a resolution which, I am sure, will meet with the approval of every one.

tude of this Association, and of each of the 2,-
tude o fthis Association, and of each of the 2,
500 members be and are hereby tendered to the officials and citizens, to the churches, to the medical profession, to the press, to the Elks and the Rotary Club, and especially to the charming and accomplished women of these beautifully located, enterprising and prosperous twin cities of Ashland and Catlettsburg, and of Boyd County for the bountiful and delightful hospitality which has made this one of the best meetings in the history of the Association.

THE PRESIDENT: You have heard the

reading of this resolution by Dr. McCormack. What will you do with it?

W. E. SENOUR: I move the resolution be adopted.

Seconded by Dr. McChord and carried unanimously by rising vote.

THE SECRETARY: I have the accounts of Councilors for the current year for the usual amounts, and in moving that these accounts be paid, I would like to say that they are not yet big enough, and I really believe in approving them it should be done with the understanding that if they are not larger next year we will not pay them. (Laughter.) Because it is not worth while to pay the smaller amounts. If the councilors would go more than once to each county, even though it would cost more for their expenses, it would be worth a whole lot more to the Association in the end. Unless they do that, I think we ought to dock their salaries and put something in the treasury.

I move not only the accounts of the councilors be paid, but also the current accounts and expenses of this meeting of the Association be paid.

Seconded and carried.

THE SECRETARY: I have a telegram from Mrs. Cora Wilson Stewart of the Kentucky Illiteracy Commission. This is the first organization in Kentucky which has had most to do with the elevation of standards in the State, and I would like to move that every physician in Kentucky pledge himself to Mrs. Stewart to do whatever he is called upon to do to assist in this great movement in his locality, or in that locality where he can be of service to her, and that the officers communicate with Mrs. Stewart to that effect.

Seconded and carried.

THE SECRETARY: The Southern Medical Association is rapidly becoming, if not already, one of the greatest scientific medical bodies in the world. It is a rather unique organization in that it has no politics. Its officers are selected by a council composed of one man from each state. The Council meets and selects officers during the year with a view to improving scientific medicine. A quorum of the majority of all members have to be present to transact any business. Those who have been in attendance at the various meetings of this Association have been greatly delighted with the character of the meetings. The meeting at Asheville, North Carolina, this year will be one of the greatest meetings ever held by this Association.

I have received from the Southern Medical Association the following telegram: "Greetings. Hope you are having a great meeting. We want Kentucky to have a big representation at our meeting in November 10-13th. Every member of the Kentucky State Medical Association has an urgent invitation to attend.

(Signed)
Southern Medical Association."

I move that the Southern Medical Association be invited to meet in Louisville next year, and that the State Association make an appropriation of $100.00 for the entertainment of the Southern Medical Association. It would be a great pleasure to have our confreres in the South to come to Kentucky; it would be a great help to the Association, and I believe the State Association should communicate with the Jefferson County Medical Society, stating that it is our desire to have as a host the Southern Medical Association, and that we all pledge ourselves to entertain them as far as it is possible for us to do it.

W. B. McCLURE: I am opposed to one part of Dr. McCormack's motion. Our funds are getting low. I think it would be a reflection on the generosity of the Jefferson County Medical Society or the physicians of Louisville for us to attempt to help them with the small expenses necessary for social entertainment of the Southern Medical Association; therefore, I am opposed to that part of the motion.

The motion of Dr. McCormack was seconded, but on being put to a vote it was declared lost.

THE PRESIDENT: It seems to me, the chief objection related to the $100.00 appropriation.

JOHN W. SCOTT: There were two questions involved in Dr. McCormack's motion, one suggesting that the Jefferson County Medical Society invite the Southern Medical Association to hold its meeting in Louisville next year, and the other was whether it was desirable or not to appropriate $100.00 by the State Association to assist in the entertainment.

THE PRESIDENT: The chair is ready to entertain a motion in regard to this matter.

JOHN W. SCOTT: I move that we suggest to the Jefferson County Medical Society, if it meets with their approval, that they invite the Southern Medical Assoeiaion to meet in Louisville. If this motion carries, it makes the issue clear.

C. W. DOWDEN: This question has already been up before the Jefferson County Medical Society at its last three meetings, and it is considering the advisability of sending a delegation to Asheville with a view to inviting the Association to hold its next annual meeting in Louisville. I simply make this statement for the edification of the delegates present.

JOHN W. SCOTT: In view of what Dr. Dowden has said, I withdraw my motion.

THE PRESIDENT: Dr. Scott has withdrawn his motion. The chair would suggest that some member offer a motion to the effect that the State Association cooperate with the Jefferson County Medical Society in securing the meeting of the Southern Medical Association in Louisville next year, provided the Jefferson County Medical Society later votes that they want to invite the Southern Medical Association to meet in Louisville. Will that meet with the approval of the members of the House of Delegates? If some member will make a motion to that effect, I will be glad to have him do so.

THE SECRETARY: I make such a motion.

Seconded and carried.

J. S. LOCK: I have recently undertaken tuberculosis work in Kentucky. I cannot do anything unless I secure the cooperation and help of you men in your respective counties. Our work is for your help, and if we can be of help to you and you can help us, we will very much appreciate it. If you let us know at any time when we can be of service to you, we will try and arrange to come. I may say incidentally that we have a supervising public health nurse in our department. Of course she is delegated to us from the State Board of Health. She is directly under the State Board of Health but it emanates from our office. We are anxious and the State Board of Health is anxious to see a public health nurse in every county. We want to cooperate with and help you, and we wish you would think about the matter and put it before the people. Those who have not had a public health nurse cannot appreciate the value she will be to you and to your people. More than that, we expect in the near future to go before the people of the counties of the State with the proposition of the sale of Red Cross Christmas Seals that have been sold heretofore. I will give you a word of explanation there. In the counties unorganized they were selling seals and the full amount was turned in to the Kentucky Tuberculosis Association. This year we will give every county in the State the advantage of what they sell, the amount that is raised in that county, whether you are organized or not. You are going to have your proportionate part of the fund that is raised from the Red Cross Christmas Seals, or in whatever other way it may be raised—a bond sale. It is called a bond. It is simply a certificate that a man donates $10.00, $15.00, $20.00 or $50.00 or any amount. It will be an engrossed certificate, stating this person has donated that much to tuberculosis work in Kentucky. If a sufficient fund is raised we will arrange for a medical department in that county, and a dispensary in every county in the State will be opened to the public two afternoons a week where you can refer cases and secure the best men to diagnose cases. If you want help in the diagnosis of tubercular cases or any other disease you can get it there, and at the dispensary we will provide a nurse to assist in the work. If we cannot do that, we hope to have enough money to put a nurse in the county for a certain length of time, not less than one month, to make a survey, to show the people what you have in that county, to help you find out about the condition of your own folks. If the funds will enable us to pay her salary, we will keep her as long as she does the work. Or we will hold that money in trust, a certain part of it, but the greater per cent. will be left in that county, and if it is not enough for the other projects we will hold that money in trust and it will be expended in your county at the recommendation of the health officer or health committee, or whoever has charge of it, recommending the expenditure of it for the help of those suffering from tuberculosis in that county. Of course, while we go under the name of the State Tuberculosis Association we take up the question of typhoid fever and other diseases.

Our work is purely educational, and by going into a county and demonstrating to the people yourself the value of this work, it will be a great help to you and to us, and we offer our services, and we hope when you go home you will take the time to explain to the people the object of this work. I hope to have your cooperation and help and through you the help of those you come in contact with.

REPORT OF THE FRANKLIN COUNTY MEDICAL SOCIETY.

To the House of Delegates of the State Medical Association:

The Franklin County Medical Society after a year of hibernation met in called session in July. In the election of officers Dr. John P. Stewart was elected president; Dr. John Patterson, vice president; Dr. U. V. Williams, emeritus secretary and treasurer for life; Dr. L. T. Minish, delegate, and Dr. John G. South, alternate.

It was determined to resume our usual monthly meetings each to be a social session with a round table discussion of a subject of which the secretary is to furnish a written synopsis. Each member is to have a five minute talk. It has resulted in putting new life into the society and the membership seems to be very much interested.

The last subject for the round table was

"The Disadvantage of Being Perfectly Healthy."

The war and the flu was more responsible for our long hibernation than a real lack of interest in the society.

We have 27 white doctors in the county and most have come into the re-organization and I am sure that all the others will, every one of whom are eligible to membership.

We favored the re-organization of the State Board of Health and its location in Louisville.

The appointment of an epidemiologist in county we also heartily endorse and expect good results from it. We hope this may revolutionize the whole method of combatting preventable diseases and that the next year may be expected to be the banner year of the Association.

We also earnestly suggest to weak and hibernating societies that they adopt the round table social meetings as a means of creating new interest.

Yours respectfully,
L. T. MINISH.

THE SECRETARY: On the first day of January the term of office of the President of this Association as a member of the State Board of Health expires. It is our duty under the law to submit to the Governor the nomination of three of our members from which to select a successor, and from the Council. I would like to place in nomination the names of John G. South, David Barrow and W. W. Anderson as the three names to be submitted to the Governor, and include in that motion that the Council be authorized to fill any vacancies amongst nominees by declination or otherwise for these positions, and to act for the Association in making nominations in the intervals between annual meetings.

Motion seconded and carried unanimously by rising vote.

THE PRESIDENT: Is there any further business to come before the House of Delegates?

W. E. SENOUR: I want to make an appeal for aid for nurses for training schools or for applicants who desire to enter a training school. There seems to be dearth of nurses throughout the country, and our hospital is in need of seven young ladies, and if any of you know of a young lady who desires to enter a training school, we will be glad to have her enter the Memorial Hospital at Bellevue, Kentucky. We have a hospital of one hundred beds, and our staff gives lectures. We feel that these nurses get the best of training, and if one of you can send us such young ladies we will appreciate it very much.

R. L. BIRD: What Dr. Senour has said applies to the hospital in our city (Covington.) We are very glad to have young ladies enter our training school. We are short four or five at present.

THE SECRETARY: This is a matter of great importance at the present time. The law requires that applicants for training in a nurses' training school shall have a high school education.

DR. SENOUR: We have three who received a high school education; they have qualified and graduated.

THE SECRETARY: This matter is of so much importance that I believe the Association should appoint a committee to cooperate with the State Board of Nurses Examiners with a view to securing applicants for training and in general to cooperate with them in the conduct of this very important matter.

Accordingly, I would like to move that a committee consisting of Drs. Irvin Abell, W. E. Senour and P. E. Blackerby be appointed to cooperate with the State Board of Nurses Examiners in this matter.

Seconded and carried.

THE PRESIDENT: Drs. Abell, Senour and Blackerby will consider themselves appointed on that committee.

If there is no further business to come before the meeting the House of Delegates will now stand adjourned.

Dobell's Solution.—Somebody recommended spraying the nose and throat with Dobell's solution as a prophylactic for Spanish influenza. Apparently every newspaper in the United States has printed this suggestion.

Dobell's solution is of such slight value as an antiseptic that we feel it our duty to warn the profession against putting their faith in it. As every doctor knows, this is a weak alkaline solution, containing borax and bicarbonate of soda, in a little glycerine and much water, rendered feebly antiseptic by the addition of three parts per 1,000 of phenol; in other words, it contains 1-3 of 1 per cent of carbolic acid. The only value a solution of this kind could have would be for the removal of mucous secretions from the nose. For this purpose it might have some slight merit.

As an antiseptic, however, Dobell's solution is a joke. Such a solution is not equal in antiseptic power to one made by dissolving one Chlorazene tablet in five quarts of water.

When people are using antiseptic solutions to prevent a terrible disease like Spanish influenza they want something which is really of value. It is criminal to advise them to put their faith in a preparation like this, when really powerful germicides like Chlorazene can be obtained at almost any drug store.

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Fourth—That vaccination against all three infections does definitely protect against all three.

Fifth—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.

Sixth—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

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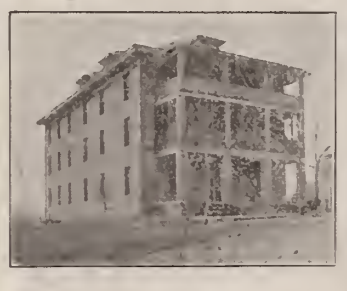
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